

YOUNG

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BEAUTIFUL
BUTTERFLIES.
BRITISH SPECIES.

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2nd issue. 1st W 1854.

Horace Marshall
From his Grandmother
Wiley. 1873.



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1. Swallow-tail. 2. Marbled White.

3



2



4



1. Scotch Argus. 2. White Admiral. 3. Red Admiral.
4. Peacock Butterfly.



2



1. Large Tortoise-shell. 2. Camberwell Beauty.



1. Small Tortoise-shell. 2. Purple Emperor.



1. Comma Butterfly. 2. Painted Lady. 3. Scarce Painted Lady.



1. Greasy Fritillary.

2. Glanville Fritillary.

3. Pearl-bordered Fritillary.

4. Weaver's Fritillary.

1



2



1. Brown Fritillary. 2. Venus Fritillary.





1. Brown Hairstreak. 2. Large Copper. 3. Large Blue.

BEAUTIFUL BUTTERFLIES:

THE BRITISH SPECIES

DESCRIBED AND ILLUSTRATED.

WITH AN INTRODUCTORY CHAPTER CONTAINING THE
HISTORY OF A BUTTERFLY
THROUGH ALL ITS CHANGES AND TRANSFORMATIONS;

A DESCRIPTION OF ITS STRUCTURE
IN THE LARVA, PUPA, AND IMAGO STATES;

AND AN EXPLANATION
OF THE SCIENTIFIC TERMS USED BY NATURALISTS IN REFERENCE THERETO.

WITH OBSERVATIONS UPON
THE POETICAL AND OTHER ASSOCIATIONS OF THE INSECT.

BY H. G. ADAMS,

*Author of "Nests and Eggs of Familiar British Birds," "Favorite Song Birds,"
"Story of the Seasons," &c., &c.*

WITH EIGHT COLOURED PLATES OF BUTTERFLIES,
CONTAINING TWENTY-TWO SPECIES.

LONDON:
GROOMBRIDGE AND SONS, 5, PATERNOSTER ROW.

M DCCC LVI.

INTRODUCTION.

"Lo! the bright train their radiant wings unfold,
With silver fringed, and freckled o'er with gold;
On the gay bosom of some fragrant flower,
They, idly fluttering, live their little hour.
Their life all pleasure, and their task all play,
All spring their age, and sunshine all their day."
MRS. BARBAULD.

"WHAT a pleasant life that must be to lead!" methinks I hear my young readers exclaim, "who would not join in the song,—

'T'd be a butterfly, born in a bower,
Where roses, and lilies, and violets meet.'

No tiresome books to bother the brains; no fagging at lessons, then; no cross looks, no angry words; no head-aches, no stomach-aches, no whippings, no brimstone and treacle; no anything but what is delightful and pleasant; flitting about in the sunshine all day long, and rocked to sleep at night in a lily bell, or some other such agreeable resting-place; sipping the sweet juices out of the flowers, and sporting in the air with companions that never get out of temper, and quarrel. Oh, that would be delightful! Yes, I'd be a Butterfly! Would not you?

My dear young Master, or Miss, as the case may be, most assuredly I would *not* be a Butterfly. Nay, do not look so incredulous, but listen, and I will tell you why. In the first place I have no fancy to be snapped up by a winged monster two or three hundred times bigger than myself, as yon bright-winged flutterer has just been by the swallow that has a little hungry family up in the chimney there, and must find Butterflies or some other equally gay and thoughtless creatures, wherewith to satisfy their wants. In the next place, I should not like to undergo such a series of changes and transformations as the Butterfly does, before he comes out in his beautiful silken dress to live his little life of a few hours in the sunshine; and for all that is said in praise of "a short life and a merry one," by the thoughtless and careless among mankind, yet would I rather, if it so pleased God, live a long life, that I might have time to cultivate and exercise these high and noble faculties of the mind, which distinguish man

from the rest of creation, and so exercise them as at once to glorify my Maker, and benefit my fellow-creatures. Nay, nay, my young friends, do not wish to be a Butterfly, nor any other merely *soulless thing*; you have within you an immortal principle—

“A vital spark of heavenly flame,”

as the poet has finely termed the soul, which the Butterfly has not; which the most sagacious and long-lived of animals has not; for the salvation of this soul of yours a great price has been paid, a tremendous sacrifice offered, and young as you may be, I would have you think seriously of this. You are not a Butterfly, thank God that you are not! Never wish to be one! Do not lead a Butterfly kind of life, as too many do, flitting and fluttering and sporting away the precious time given you for other purposes. Be diligent, be useful. Head-aches, and heart-aches, too, you must have, and many hard lessons you must learn, even when your school-days are over; for it is ordered by an all-wise Providence, that the human soul shall be purified by trouble and affliction, and so prepared for the better land, towards which we are all journeying. The end of the Butterfly is here; your end is in eternity. Think of that, and think, too, of the many pleasures which you enjoy, of which the Butterfly can know nothing; intellectual pleasures—pleasures of thought and feeling; warm affections and lively hopes are yours, out-gushing from your own heart and bosom, and from the hearts and bosoms of those to whom you are dear, and watching round you like angels wherever you move. You can speak, and write, and think, and above all you can *pray*, and *be prayed for*. Here is a privilege! For the poor soulless Butterfly there are none of these good things.—

“Its little hour of sunshine o’er,
It passes from the view,
To breathe the breath of life no more—
It is not so with you.

Your soul shall from the tomb arise
In beautiful array,
To dwell for aye in Paradise,
And everlasting day.”

WHAT IS A BUTTERFLY?

“Who can follow Nature’s pencil here?
Their wings with azure green and purple glossed,
Studded with coloured eyes, with gems embossed;
Inlaid with pearl, and marked with various stains
Of lively crimson through their dusky veins.”

Mrs. BARBAULD.

WHAT is a Butterfly?—An insect. True; and the name we are told is a literal translation of the old Saxon word *Buttor-fleoze*, applied to these silken-winged flies, because they usually become

plentiful in the butter season. I have next to ask you what you understand by an Insect?—A little crawling, or flying thing, with—Nay, that will not do at all. Let me find out Johnson's definition of the word. Ah, here it is, in Latin *Insectum*, that which is cut—"Insects may be considered together as one great tribe of animals: they are called Insects from a separation in the middle of their bodies, whereby they are cut into two parts, which are joined together by a small ligature, as we see in wasps and common flies." You have no doubt noticed this remarkable peculiarity of the Insects here named; it is especially conspicuous in the wasp, the lower part of whose yellow body looks as if it would drop off at every motion. We have heard a very slim and genteel lady spoken of as having a waist like a wasp, but hope she was not waspish in other respects. Another meaning for the word insect, given by the great dictionary-maker, is "Anything small or contemptible." Let us illustrate this meaning.—"Sir," said a little upstart man, desirous of impressing the person he addressed with a due sense of his consequence, "do you know what sect I belong to?" "I should say, by the look of you," was the good-humoured, yet cutting reply, "to that called Insect."

We must not, however, consider that because things or persons are small, that they are *therefore* mean and contemptible; arrogance and undue assumption of importance always make people so; but in the world of Nature we find so much that is wonderful in design, and beautiful in construction, in the minutest creatures, that to the philosophic mind they can never be so. With the poet Cowper,—

"In the vast and the minute we see
The unambiguous footsteps of the God
Who gives its lustre to the insect's wing,
And wheels His throne upon the rolling worlds."

I am now going to introduce to you another member of the learned family of OLOGIES. In a former volume of this series, you made the acquaintance of two or three members of this family.* This is rather a tall individual.—What do you think of him?

ENTOMOLOGY.

FIVE syllables, thus—En-to-mol-o-gy. Let us see what account Dr. Johnson gives of him. None at all! Not in the big folio? Nay; then he must have sprung into existence since the great lexicographer's time; for all that he stands upon Greek legs—*entom*, an insect; and *logos* a discourse. Now you know what it

* Nests and Eggs of Familiar British Birds.

means literally—a discourse on an insect, or as generally applied “That part of Zoology, or Natural History, which treats of Insects.” By this science we are conducted into the most extensive and populous province in the whole empire of nature, and shewn a great diversity of form and colouring, and more surprising adaptations of means, than is presented to us by any other branch of physical science. Truly has it been said that “Entomology claims it as its right to demonstrate the existence and perfections of that Almighty Power which produced and governs the universe. It is one chapter in the history of creation, and naturally leads every intelligent mind to the Creator; for there are no proofs of His existence more level to the apprehension of all than those which this chapter offers to the understanding.”

“In an insect or a flower,
Such microscopic proofs of skill and power,
As hid from ages past, God now displays,”

Says the poet Southey, in allusion to the wonders revealed by the microscope in the natural world, and especially in that branch of it with which Entomology has to do.

But it is to one particular division of the insect tribes that I have now to direct the attention of my readers.

LEPIDOPTERA

Is the name given to that order of insects in which “Beautiful Butterflies” are included. Here is another long word not to be found in Johnson’s dictionary—*Lep-i-dop-te-ra*, five syllables, derived from two Greek words—*lepis*, a scale; and *pteron*, a wing. Butterflies and Moths, then, are Lepidopterous or scaly-winged insects; if you observe one of them closely, you will find that the wings are covered with a fine downy substance like meal; examined under a microscope this will be found to consist of minute scales of uniform size and shape, that is, upon one species of fly, for they differ considerably in this respect in different species, as the following drawings will shew.



They are fixed to the wing by means of a fine pedicle, or stalk, similar to that of a plant, only so small as not to be seen

by the naked eye. It is in these scales that the beautiful colours, which make the wings look like painted velvet, exist; if you rub them off, nothing but a thin transparent membrane remains; this is veined all over, much like the skeleton leaves which you may have seen, and these veins no doubt answer the double purpose of canals for conveying nourishment to the frame, and of ribs for giving it mechanical strength. A naturalist named Leiuwenhoek, has counted as many as four hundred thousand scales upon the wings of the Silk Moth, and some of our British Butterflies are four times as large as this; there are foreign Moths which sometimes measure nearly a foot across the wings; think of the number of scales required to cover them. It has been said that "a modern Mosaic picture may contain eight hundred and seventy Tesserulæ, or separate pieces, in one square inch of surface; but the same extent of a Butterfly's wing may sometimes consist of no fewer than one hundred thousand, seven hundred and thirty six; he would be a rich man indeed who had as many guineas. How long would it take him to count them, suppose he were to pick them up sixty a minute, and work ten hours a day at that rate? There's an exercise in mental arithmetic for you.

Now let us go back to our subject, which you know is Lepidopterous Insects—recollect that long word—or Butterflies, we were going to say, but the thought occurred that all these scaly-winged insects are not Butterflies; some of them are Moths, and some Hawk Moths. The three great divisions into which naturalists have divided this order of insects, are, as you must try and remember, First, Butterflies, or *Diurnal*, that is Day, Lepidoptera; Second, Moths, or *Nocturnal*, that is Night, Lepidoptera; and Third, Hawk Moths, *Crepuscular*, that is Twilight, Lepidoptera; these names indicate their different seasons of flight. It is with the first division only that we have to do at present; and this forming a genus of itself, is distinguished by a generic name, and here it is—

PAPILIO.

Look at it well, now, so that you may know it again when you see it, as you often will in books of Natural History. *Pu-pil-io*, pronounced *pa-pil-yo*; it comes from the Latin, and means a Butterfly, which is all I can tell you about it. In botanical works you will sometimes see plants spoken of that have *papilionaceous* flowers, that is, with petals something in shape like the wings of a Butterfly, as the sweet pea has, and several other beautiful ornaments of the garden, with which you must be familiar. This resemblance of the bright-hued flowers to the Butterflies' wings has been often alluded to by the poets, one of whom, named Thomas Moore, describes

“A child at play,
 Among the rosy wild-flowers singing,
 As rosy and as wild as they,
 Chasing with eager hands and eyes
 The beautiful blue Butterflies
 That fluttered round the jasmine stems,
 Like winged flowers or flying gems.”

In another part of the same poem, which is called “Lalla Rookh,” the name of an Eastern princess, we find a scene described in which

“Sparkle such rainbow Butterflies,
 That one might fancy the rich flowers
 That round them in the sun lay sighing,
 Had been by magic all set flying.”

But let us go on with our lesson. Butterflies, then, we have learned, are a day-flying *genus* called *Papilio*, of the Lepidopterous or mealy-winged order of that class of living creatures called Insects, the study of whose nature and habits is termed ENTOMOLOGY. The great Swedish naturalist, Linnæus, arranged all the flying, walking, creeping, and swimming things known in his time into six *classes*: these classes included several *orders*; the orders various *genera*; and the genera distinct *species*; more or less numerous as the case may be. This was called the Linnæan system of natural history. I need not explain to you the principles on which it was based, nor tell you in what respects it differs from the systems of the illustrious Frenchman Cuvier, and other naturalists. One of these days I may perhaps do this, but at present it is scarcely necessary to puzzle your brains about it. I want you clearly to understand what a Butterfly is; to learn one letter of the great alphabet of nature first, and it will assist you in acquiring the rest. Now, what is a Butterfly? “An insect of the Lepidopterous order——” Nay, you are going to tell me what it is *called* merely; undoubtedly it is all that, but it is also something more—a wonderful manifestation of the wisdom and the goodness of the Almighty Creator, as I am now going to shew you, and to do this properly, I must begin at the beginning, and trace the

HISTORY OF THE BUTTERFLY,

from the time when it was a tiny egg, not so big as the head of a good-sized pin, glued by the mother insect to that particular kind of leaf, on which the caterpillar, that it will shortly turn to, feeds. Now, here is a wonder at once; the Butterfly, recollect, does not feed upon leaves, but the sweet juices extracted from flowers, and those by no means flowers of the plant from which it derives nourishment while in the caterpillar or *larva* state, as it is called. How then should it know the particular description

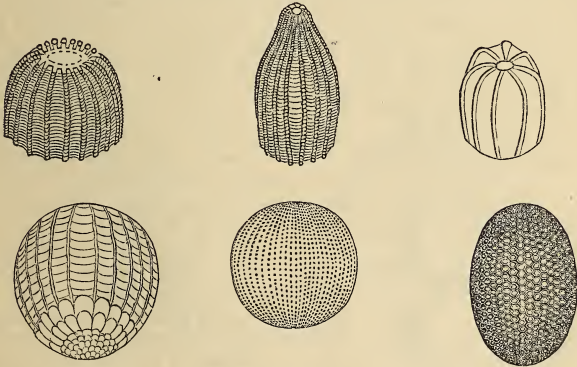
of food suitable for its 'crawling progeny, in every respect so unlike itself? We can only say that God teaches it. INSTINCT is the name generally given to the mysterious knowledge which seems to direct all the members of the brute creation. Man, you know, has Reason for his guidance, animals have not; still they are guided, and often more surely to the desired end, than man with all his boasted reason. The poet Pope has said

"Reason raise o'er Instinct as you can,
In this 'tis God directs, in that 'tis man." *

Well then, guided by this mysterious principle called Instinct, the Butterfly affixes its eggs just where the young Caterpillars when they issue forth, are sure to find plenty of suitable food ready for them.

To the naked eye all Butterflies' eggs look round, and pretty much alike, but by the following representation of those of six different species, magnified, you will see that they are by no means so. You cannot fail to be struck with the beautiful regularity of the shapes and the markings. Do they not seem to say to you—

The hand that made us is Divine?



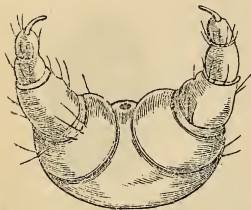
The term CATERPILLAR is supposed to be derived from two old French words—*acat*, food or provision, from whence comes the term *cates*, sometimes used by English authors; and *piller*—to rob or plunder, the origin of the word *pillage*; there is here an

* On the difference between Reason and Instinct we shall have more to say in a future volume.

obvious reference to any voracious habits of these creatures, the most destructive of any to vegetation. In Scripture they are spoken of as eating up what the other insect ravagers have left, as you will see by turning to the fourth verse in the first chapter of the prophet Joel. In Hebrew the Caterpillar is called a *consumer*, and well does the cultivator of the land know it to be such; it begins to eat directly it comes out of the egg, and continues to eat, eat, nothing but eat, except grow, which it does very fast, and crawl from place to place in search of fresh food, of which it sometimes consumes more than double its own weight in twenty-four hours. Think if you were to do this, what bakers', butchers' and grocers' bills your parents would have to pay.

The body of the caterpillar is, as you know, long, and nearly cylindrical, that is, like a tube or pipe; it is divided throughout into twelve *segments*, as they are called, that is divisions, as though pieces of thread were tied round it at equal distances, and drawn sufficiently tight to make slight indentations. The skin, which covers this body, is usually soft and *membraneous*, that is, web-like, covered with little lines, which cross and re-cross each other, as in a piece of net-work; sometimes, however, it is of a *coriaceous* texture, that is tough, like leather; in both cases it is very *flexible*, so that the creature can easily turn and twist itself about.

Most of the *Larvæ* of the Diurnal Lepidoptera have sixteen legs, six of which, that is three pairs, are placed on the three first segments of the body, the part which corresponds with what is called the *thorax* of the winged insect; these foremost legs appear to be the ones principally used for locomotion or travelling; they are of a hard substance, rather wide where they join the body, and gradually tapering down to the bottom, where they terminate

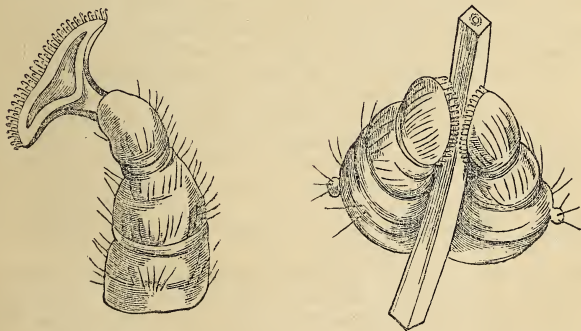


in a strong claw, by which they can draw themselves along. Like the leg of the future fly, each of them is divided into several segments, or, in other words, it has several joints, as represented in this figure. You will see that he is rather a bandy-legged fellow—this Caterpillar, but there is wisdom displayed in this, as in every other part of his structure, how admirably are these legs adapted for

clasping and holding fast.

Now for the other, or *pro-legs*, as they are sometimes called; *pro*, in Latin, means for; therefore this is as much as to say these are not legs, but substitutes for legs, and such it appears they really are; their principal use seems to be to support the body,

to the hinder part of which they are attached; a pair on each segment up to the ninth, and the remaining pair on the last; by adhering to the twigs or shoots, on which the animal crawls. You stare at the word animal, applied to a Caterpillar, but it is quite correct. All living creatures are animals, you are one, and I am one, and the invisible animalcule that sports in a drop of water is one. But we will not stop to discuss the point now, having the pro-legs of our crawler to examine. I have said that they are soft and fleshy, or membranous legs, or things that in some measure answer the purpose of legs. They are of a cone, or sugar-loaf shape, and can be lengthened and shortened at pleasure, like the horns of a snail; each of them is terminated by a triangular-shaped foot, if foot it may be called, at the bottom of which is a flat surface, or what may be termed the sole; on the inner edge of this, is a row of small hooks, or claws, consisting of a long and short one alternately placed. When the foot is extended, these claws are turned outwards, and their curved points find inequalities on which they can take hold on almost any substance, however smooth it may appear. Here are two cuts;—one exhibiting this curious pro-leg with the foot expanded, and the other shewing how a pair of them embrace and hold fast to a twig or branch.

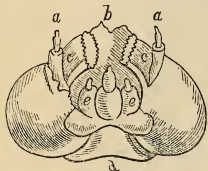


We have now to speak of the head of the Caterpillar, which is harder than the rest of the body, and is generally composed of two oval plates joined together; in the next cut is represented the under side of this head; that part marked *b* is the mouth, consisting of an upper lip, with a notch in the centre; *cc* are the two strong mandibles, or jaws; and *d* is the under lip, near

the top of which is a cone-shaped protuberance, from the centre of which, through a small hole, issues the fine silken thread which serves several important purposes in the changes which the insect undergoes; the *spinnaret* is the name which has been given to this organ; on each side of it is a similar-shaped, but smaller protuberance, marked *ee*: these are generally thought to be the *palpi*, or feelers.

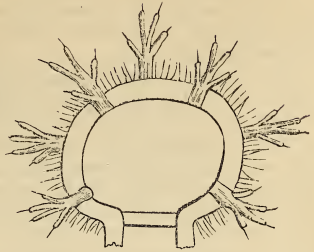
The rapidity with which a Caterpillar eats, proves that its cutting machinery is in good order, and well arranged for facility of working; if you watch the creature feeding, you will observe that the leaf on which it intends to operate, is taken edgeways, and held steady between two of the fore feet. Before commencing the body is stretched out as far as possible; the rapidly-moving jaws take off piece after piece, which is instantly swallowed, and at every bite the head is drawn in, until it comes close home to the legs, which hold the leaf, when another extension takes place, and another series of bites is commenced, till, by and by, the substance bitten is hollowed out like a half-moon. The notch in the upper lip, being even with the place where the jaws unite, appears to answer the purpose of a groove, to keep the margin of the leaf steady, and guide it in the proper direction.

The eyes and the *antennæ*, or horns, have now to be noticed; the first appear to the naked eye like two little dark spots; the microscope shews that each of them consists of six distinct eyes, or lenses, arranged in a circle; they are placed in the fore part of the upper side of the head, and are therefore not seen in the cut. The *antennæ*, or horns, although usually large in the perfect insect, are small in the Lepidopterous larvæ, being composed of two or three short joints, fitting into each other, like the tubes of a telescope, like which, too, they can with some species be drawn in, so as to be almost imperceptible; the letters *a a* point out their situation in the cut.



You will have noticed that Caterpillars differ very much in appearance;—some being smooth, and others rough and hairy; with some again the hairs are long and silky, with others short and harsh; some have them in tufts placed at regular intervals along the back or sides of the body; indeed they are seldom, if ever, irregularly placed; but whether few or many, a certain order of arrangement may be observable in the little tubercles, or lumps, from which they spring; these tubercles are placed in rows across the middle of the segments, and each segment is armed—for the spines may be considered as defensive armour—with a transverse,

that is a crosswise, series, varying in number from four to eight. The mode of arrangement and structure of these spines is exhibited in the section here given of a not uncommon species of British Caterpillar.



Why some Caterpillars should be hairy and others smooth, it is impossible for us to tell; in His wisdom, God has so ordered it, we may be sure for some good and useful end. Upon the hairy species, it has been observed, that the birds seldom prey; and there is no doubt some sufficient reason why they should be especially guarded from their enemies.

Many of the Caterpillars are very beautifully coloured and marked, appearing to have silken coats, embroidered with gems; this is more especially the case with the larvæ of some of the foreign day Lepidoptera; in this country those of the crepuscular division, or Hawk Moths, are the most beautiful, and to these we shall have to refer in another volume.

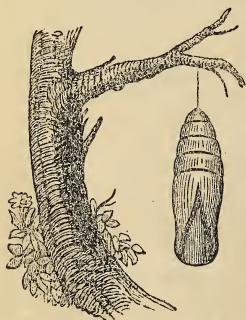
There is nothing more curious in the whole history of the Caterpillar than its *moultings*, or changes of skin, of which there are, at least, three, before the full size is attained. When it gets too big for its coat, the creature by a laborious effort, which is a painful, and at times, even a fatal one, wriggles itself out, and leaves the old garment for whoever may take a fancy to it; but there is no occasion to go and get measured for another, as there would be with you or I, for a new one quickly forms around the body, fitting as nicely as need be. Sometimes the colours of this new coat are different from these of the old one, and the markings have a fresh arrangement, as if the fashions of the season had been studied in its preparation; but no, it was made in accordance with certain laws ordained from the beginning, in which there is no variableness, nor shadow of turning. The fashion of a man's coat, or a boy's jacket, changes constantly; but the fashion of a Caterpillar's skin never, under certain circumstances it is always the same; its variations are regular, so that one who has observed these matters, can tell what kind of covering a particular species at a particular age will have. The Naturalist will know at once, the nature, and the character, and the age, of a certain smooth or hairy worm, which crosses his path, or feeds upon the leaf near at hand, by the shape and markings of its outer garment; suppose we could tell as much of men and boys, by the cut and

colour of their coats and jackets! Would not this be convenient?

Much might be said about the internal structure of the Caterpillar, but we cannot say it now, the same wisdom of design, and nicety of adaptation is exhibited there, as in the parts more exposed to observation.

We will now suppose the creature passed through all the changes accidental, to the *larva* state;—this word in Latin means a mask; in this state the future fly is hidden or masked; *Larvæ*, the word we have hitherto used, is the plural—it has eaten its own weight over and over again, may be a hundred times or more, in nettle, or cabbage, or some other leaves, and has now arrived at a ripe old Caterpillar age, so it prepares to go into what is called the *pupa* state, the second stage of its strange existence. *Pupa* in Latin means a puppet, a baby, a thing wrapped up, swaddled, as they say, of no particular shape—a lump; such is a *chrysalis*, as the insect, in the *pupa* state, is called. Singular, *Chrysalis*; plural, *Chrysalides*, from the Greek *chrisos*, golden. The Latin authors termed these *aurelia*, from *aurum*, gold; because the cases of some of the *pupa* have a glittering appearance as though they were partly composed of that metal. You may have seen one, that of the Tortoise-shell Butterfly, generally found near a bed of nettles, on which the Caterpillar feeds; it is rugged, uneven, angular in shape, as is also that of another common species, the Cabbage Butterfly, this latter is of a greenish yellow colour, marked with black spots.

Some Caterpillars, when about to change into chrysalides, creep into holes and crevices, others bury themselves in the earth; some envelope themselves in a tissue of fine silk, as the silk-worm does, this is called a *Cocoon*, of the origin of which word we must confess our ignorance; my readers will do well to try and find it out. Some of these chrysalides, again, suspend themselves to a



bough, or other convenient object, by means of a silken cord, sometimes fastened round the middle, sometimes to one end, of the oblong case, as shewn in this cut designed by Thomas Hood, to illustrate the popular ballad "I'd be a Butterfly." Here the part downwards is the head. A very interesting account is given by a naturalist named Reaumar, of the way in which the Caterpillar proceeds to effect this suspension, and change from the *larva* skin into the *pupa* case; but it is too long for quotation here, by-and-by you will, I hope, read it for yourself, in some larger Entomological

work. It is related that it sometimes takes as long as twenty-four hours to effect these changes. Reaumar observes that "it is impossible not to wonder that an insect which executes them but once in its life, should execute them so well. We must necessarily conclude that it has been instructed by a Great Master; for he who has rendered it necessary for the insect to undergo this change, has likewise given it all the requisite means of accomplishing it in safety."

When first the larva skin is thrown off, the chrysalis is soft and tender; it is covered with a sticky kind of fluid, through which portions of the future Butterfly can be clearly seen; like a thing closely packed up, and put away until it is wanted. Gradually the fluid covering hardens, and closely enveloping all the parts of the insect, forms a case impervious to wet or any other atmospheric influence.

"It was a shrivelled shrouded form,
Though but of late a living worm;
A caterpillar it had been,
Once clad in suit of silky green;
But now how changed by nature's laws!

Where are the eyes, the legs, the jaws?
No signs of being can one trace
In the cold mass; its outer case,
Like cere cloth round a mummy spread,
Is passive, motionless, and dead."

And there it swings, or lies wrapped up in its silken cocoon, or hid in the earth, or some snug hole or corner, until the time arrives for the release of the little prisoner, when—

"Lo! the shrouded thing
Loosed from its earthly covering,
From shape uncouth and dusky hue
Like some fair vision springs to view,
A glossy wing in burnished pride
Unfolding rises from each side;

Its tapering form in beauty dressed,
Like gold dust o'er a yellow vest;
Whilst hands unseen had giv'n the power
To gather sweets and suck the flower.
It is a Butterfly, as bright
As ever sparkled in the light."

And this third state of its existence is called the *Imago*, or perfect state of the insect; this term is the Latin for Image, whence comes Imagination, that faculty of the mind which produces images of things unknown, etc.

I will now recall the stages through which the insect has passed before it assumed that glorious shape—that complete *image* of beauty, in which it now hovers and flutters before our eyes—

"The brightest and the lightest thing
That flits about on sportive wing;"

And to impress these more deeply on your memory, will place, beneath the name of each, its pictorial representative, as shewn in the next page.

The appearance of these creatures in their various states of Caterpillar, Chrysalis, and Butterfly, is so strikingly dissimilar, that it was long a general belief that they underwent, at each successive

LARVA.



Caterpillar.

PUPA.



Chrysalis.

IMAGO.



Butterfly.

stage, a complete transmutation, or change from one being to another; "but it is now clearly seen," says the naturalist Swammerdam, "that within the skin of the Caterpillar a perfect and real Butterfly is hidden, and therefore the skin of the Caterpillar must be considered only as an outer garment, containing in it parts belonging to the nature of a Butterfly, which have grown under its defence, by slow degrees, in like manner as other sensitive bodies increase by accretion," that is, by growing or gathering of new matter. In every Caterpillar, therefore, it would seem that from the earliest period of its life, there exists the germ or seed, if I may so call it, of the future fly, even as in the interior of the unexpanded bud, may be discovered the germ of the future flower. So that all these changes are but a series of developments, a throwing off of outer coats, so to speak; and shewing more and more clearly the perfect form within. All this is very wonderful, and worthy of our closest study and attention. So striking did these changes which the insect undergoes appear to the Ancient Greeks, that they regarded the Butterfly as the fittest emblem of the soul of man; accordingly we find that their word *Psyche* pronounced *Syke*, with an accent on the last letter, signifies both the human soul and a Butterfly. And very beautiful and appropriate is this emblem. How like a rising from the tomb and soaring upward to the realms of light, is this bursting forth of the imprisoned fly from its dark chrysalis chamber, to spread its glittering wings and float aloft in the golden sunshine. The poet Rogers has written some fine lines upon this subject, which, I think, you will be able to understand and appreciate: here they are—

"Child of the sun! pursue thy rapturous flight,
Mingling with her thou lovest in fields of light;
And, where the flowers of paradise unfold,
Quaff fragrant nectar from their cups of gold,
There shall thy wings, rich as an evening sky,
Expand and shut in silent ecstasy.

* * * * *

Yet wert thou once a worm, a thing that crept
On the bare earth, then wrought a tomb, and slept;
And such is man; soon from his cell of clay,
To burst a seraph in the blaze of day."

And now let me read to you a lesson of moral instruction, which the Natural History of this insect is calculated to enforce; I will do it in the words of a German fabulist, or writer of fables; this story is called an Allegory:—A humming-bird met a Butterfly, and being pleased with the beauty of its person and glory of its wings, made an offer of perpetual friendship. “I cannot think of it,” was the reply, “as you once spurned me, and called me a drawling dolt.” “Impossible,” exclaimed the humming-bird, “I always entertained the highest respect for such beautiful creatures as you.” “Perhaps you do now,” said the other, “but when you insulted me, I was a caterpillar. So let me give you this piece of advice:—never insult the humble, as they may one day become your superiors.” No, never insult the humble, nor despise that which is mean-looking, merely because it is so. The smallest and lowliest creatures have in them much that is worthy of admiration, aye, even of respect, for they are all the works of one Great Creator, and you know not what they may be destined to.

“Look round creation, and survey
Life springing forth from life’s decay;
In gladsome April view the tree
Resume its verdant livery;
From bars of ice the river freed,
Pursue its course along the mead:

And earth, escaping from th’ embrace
Of winter, show a joyous face.
E’en thus the worm, though lowly found,
Groping its way upon the ground,
May yet revive, a creature fair,
And wander ’midst the realms of air.”

We will now examine a little into the structure of the perfect insect—a Common Butterfly; and a truly wonderful piece of living machinery we shall find it. The body is divided into two principal divisions, called the *Thorax*, meaning the breast or chest, and the *Abdomen*, or stomach. The first of these is composed of three segments, something like those described on the Caterpillar; and the last of six or seven; these two sections of the body have, as in most insects, a very narrow line of connection; they are both covered with hairs, more or less long in different species. The upper one is always thicker than the lower, because to it are attached the organs of motion—the legs and wings, the muscles of which, especially those of the latter, are numerous and powerful. The legs are six in number, and this is the case with all true insects: there are three on each side, and their points of junction with the body are pretty close to, and at about equal distances from, each other. In each leg there are three principal divisions, the thigh, the *tibia*, or pipe, and the *tarsi*, or toes; just as there are in the human leg, only the shape differs considerably, as you know. A Butterfly would not look well with silk stockings, because he has no calf; the thigh is often fringed with long hairs, and the *tibia* armed with a spur in the middle, and two others at the top: the *tarsi* are five-jointed, and furnished with two claws at

the extremity, which are often what is called *bifed*, that is cleft in two; this word comes from the Latin *bi*—two, from whence also comes *biped*—a two-legged creature, and several other words beginning in the same way. When I tell my little boy he is a *biped*, he says, “and you are another,” and he is quite right, for we are all *bipeds*; *bi*—two, *pede*—foot; literally two-footed, as *quadruped* is four-footed; and *tripod*, a kind of stool that stands upon three feet; from the Latin *quatuor* four, *tres* three; also the roots of many English words. But why do I trouble you with all this about roots and derivations? because I am desirous of making you look into things, to be thoughtful and inquiring; so that you may know the *reason* why this or that name is applied to a certain object or operation. This is the way to learn! Some Butterflies are called *tetrapod*, or four-footed, because, although they have six legs, they have but four feet, two of the legs being what are termed *spurious*, or false, there being only one joint in the *tarsis*, and consequently no claw or foot.

From the legs we go naturally to the wings, they being situated very close together; if these Butterflies have two pairs, the upper pair being generally of a triangular form, and the lower pair nearly circular, the shape, however, as well as the size, varies greatly in different species; and the difference in the colours and markings is, as you know, great indeed. I have already spoken of the mealy powder or scales, (feathers they are sometimes called,) in which the colour resides; and may therefore pass on to observe that the thin membrane, of which the wing itself consists, is traversed by small tubes, called *nervures*, filled with air and an air-like fluid, which acts so as to expand the wing when the fly first issues from the *pupa* state, and to strengthen and keep it extended afterwards; the principal *nervures* rise from the point where the wing joins the body, and where there is a horny scale, covered with tufts of hair, so that it resembles a little epaulet, such as the soldiers wear; and the parts between the main pipes, as they may be called, are termed, by naturalists, *areolets*, that is little spaces; from *area*, an open or flat surface between lines or boundaries.

Naturalists consider the upper wing of the Butterfly divisible into three of these spaces, and across them from branch to branch ramify, that is spread out, smaller pipes, so as to form a complete network, as I have before observed. In some species these minute veins are much more numerous than in others, and in some they scarcely, or at all, occur.

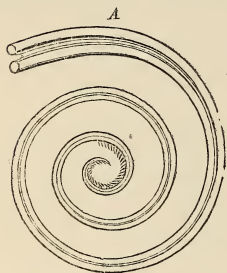
It may be observed that Butterflies, when at rest, generally carry their wings upright, so that the backs of them meet together, and only the under sides are visible; and here is an obvious mark of distinction from the Moths, which keep theirs flat, even with

the ground, or whatever they may rest on, and so show only the upper part; the flight of the Butterfly, too, is more wavering than that of the Moth generally. It does not go in a direct line, but keeps rising and falling, and herein often lies its safety from the pursuing bird, with whose beak it is level one instant, and the next far above or below it. Thus it is that the weaker creatures are often able to elude or baffle the pursuit of the stronger, by superior cunning or agility; a something which is given as a compensation for want of power, and a means of preservation from their foes.

Not all the Butterflies, however, are distinguished by this irregular and fitful mode of flight; some of the larger sorts, which are strong upon the wing, go more directly to their object, and sometimes even make way against currents of air, which would make the less weighty and powerful flutterers seek shelter in a lily bell, or a tent of green leaves. A practical entomologist can generally tell the species of a Butterfly by its mode of flight, so much difference is there in this respect.

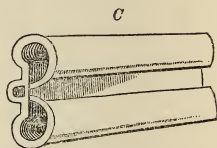
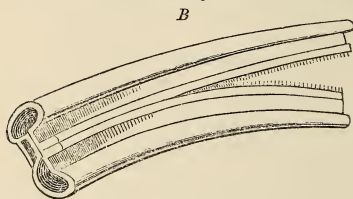
One very important part of the structure of the insect I have not yet described, that is the head, the most conspicuous and curiously constructed organ of which, is the long flexible tube used for sucking the juices out of the nectaries of the flowers; that is of a *cartilaginous*, or gristly substance, arranged in rings, woven together, as it were, by means of minute fibres, so that it can be curved or twisted in any direction, with great ease and rapidity. This tube is, in reality, the mouth of the creature, for it has no other, nor any occasion for one, as it lives by suction, and is hence classed among the *Haustellated*, (from the Latin *Hanstus*, a draught,) or suctorial tribes of insects. The *Proboscis*, or trunk of the Butterfly, is divided into two distinct portions, which can be separated throughout their whole length, each portion being grooved on the inner side; they form, when united, a sort of canal of a squarish shape, through which passes the nourishment which the insect sucks up. The union of the two halves of the trunk is effected by the interlacing of an immense number of threads, which form a kind of fringe along the edges, and so close is it that the canal is perfectly air-tight; and on each side of it there runs from top to bottom a circular passage, the use of which does not appear to be very clearly known, although it is thought most likely to be the transmission of air for the purposes of respiration or breathing, which, however, is mainly carried on by means of pores, or very minute openings in the sides of the body, called *stigmata*, from *stigma*, a mark; these pores presenting the appearance, under the microscope, of little pits or dots. Near the outer extremity of the trunk, which, when not in use,

is curled up like the spring of a watch, are generally a number of projections, resembling leaflets; a scientific naturalist would call them *papillæ*, the Latin for nipples. Reaumur supposes that the use of these is to steady the organ, by adhering to the sides of the flowers into which they are inserted. In order that my readers



may have a clearer understanding of the structure of this wonderful little instrument, I have caused three cuts to be executed. *A* is a magnified view of the trunk, exhibiting its general form, and the *papillæ* near the tip. *B* is a highly magnified section in which the mode of connection is shown, with the central and two lateral or side canals. *C* is another section showing the under side. Is it not marvellous, that all this is in a little tube not much thicker than a hair; human skill and ingenuity can do much,

but they would surely be at fault here.

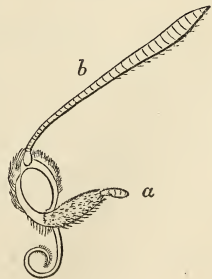


We have seen that the proboscis of the Butterfly is composed of two distinct parts, which may be considered as occupying the same place in the general structure of the insect, as the *maxillæ* or under jaws of the *mandibulated* tribes. We have here two Latin words, and when I tell you their meaning, you will understand what I wish to express; *maxilla*, then, means the upper jaw bone, the termination *æ* makes it plural; *mandibula* is the Latin for jaw, so the term above used, would signify tribes that have jaws, as much the larger number of living creatures have. It was perhaps not quite correct of me to say that the Butterfly had no mouth, for there is a little cavity just below the insertion of the trunk, which, although it hardly deserves the name of a mouth, and does not appear to be used at all as yours and mine, or even that of the Caterpillar is, yet it must, I fancy, be so called.

And we must now speak of the *oral* appendages, that is, the parts which belong to the mouth. The word comes from the

Latin *os* or *oris*; now if you should hear or read that a person has, or intends to communicate with another *orally*, you will understand that it means by word of mouth—that is, by speech. This little cavity that I spoke of is covered by a small triangular plate, “which must be regarded,” says an authority on these matters, “as the *labium*, or under lip.” There is another Latin word for you to remember; these letters of the English alphabet, such as b, p, v, f, m, which are pronounced chiefly by the lips, are called *labials* you know, or should know. You have no doubt noticed two short points projecting from the front of the head of a Butterfly, I do not mean the horns, which are long, slender, and nobbed at the ends; but I mean what are called the *labial palpi*.

In describing the head of the Caterpillar, I spoke of the *palpi* or feelers; this latter term comes from the Latin *palpus*, and it expresses the action of feeling gently or timidly, just as the snail does, you know, which draws in its horns directly they come in contact with anything. The term also means to flutter, hence you may hear a weak person say that his heart *palpitates*, when he has used great exertion, or been over-excited. Now, both these meanings will apply to the *palpi* of the Butterfly, which sometimes has a quivering or fluttering motion, and I have been thus particular in explaining them, in order that you may see what great significance there is in scientific terms generally. Ignorant people often wonder what use there can be in these long names, but you here see that they have a use, and you may also see how necessary to a right understanding of them is a knowledge of the Greek and Latin languages, on which they are chiefly founded. These languages may be considered as the keys of all the sciences—by all means try and obtain possession of these keys, for they will well repay you for years of study; with them to guide you, and the habits of observation and method, and analysis, which their very acquisition will induce, much that now seems difficult and strange, will be clear and simple, and full of order. Now let us go back to the *palpi*, it would be *palpa* if only one, but that there are two is quite *palpable*, that is plain—they can be seen and felt, and those who have examined them through a microscope, tell us that they are three-jointed, and in shape like this. In this cut, the letter *a* indicates the organ I have been describing; and *b* the *antenna*, plural *antennæ*. This term I have used



before in describing the insect in its *larva* state; but I did not then speak of its derivation. The Latin word *antenna* means the sail-yard, as it is called, of a ship, that is the piece which crosses the mast, and to which the canvass is affixed; these horns of the insect, in some cases sticking out in nearly opposite directions to each other, suggested the idea of the cross-pieces on a mast, and so the same Latin name was applied to them. They are generally of considerable length, and consist of a great number of joints, usually increasing in thickness towards the extremity, where they form a kind of knob; this formation you must often have noticed; it is peculiar to the Diurnal Lepidoptera, and by its variations of shape affords an obvious distinction between different genera. In the Moths the *antennæ* are often beautifully feathered and fringed, but we do not find this the case with the Butterflies.

I have now only to speak of the eyes, which are of two kinds, the *stemmetic* or simple eyes, which are usually two in number, and placed on the crown of the head, where, if seen at all, which is not the case in all species, they appear as little clear spots, nearly covered with hairs and scales. Their use as organs is somewhat questionable, but they may be of service in some way, as yet undiscovered by the investigation of scientific men. The ordinary or compound eyes, as they are called, are plain enough; they occupy a great part of the head on each side, and project from it like a half globe; unlike the human eye, which can move in various directions, they are fixed, but to compensate for this they are composed of an immense number of little lenses, each of which is capable of reflecting a perfect image, so that on whatever side you approach a Butterfly, (and it is the same with most other insects,) it can see you without moving its head or rolling its eye-ball in the socket, as you or I would be obliged to do, to be aware of any danger approaching from a direction other than the front. Naturalists tell us that they have counted as many as seventeen thousand three hundred and twenty-five lenses in a single eye; double that for the pair, and it gives thirty-four thousand six hundred and fifty *little circular looking-glasses*, to a single pair of eyes, contrived and fashioned for an insect destined to live but for a few hours. I can tell you nothing more wonderful than this, so I think I may as well bring my description of a Butterfly to a conclusion, the more especially as I have mentioned all with which it is necessary for you to be acquainted about the history and structure

Of that wonder of wonders, the bright-winged fly,
That flits to and fro in the azure sky;
That has died, and been buried, and sprung from the tomb,
To live amid sunshine, and beauty, and bloom.

As the subject of my present volume is "British Butterflies," I would say a few words with especial reference to them. They are neither so large nor so beautiful as some of the foreign ones, yet are there many of the native species remarkable for elegance of form and richness of colour, as the examples here given will serve to show; and, by the way, here let me mention one peculiarity in the wings of the Butterfly, which should not go unnoticed—the under, as well as the upper, side of this wing, is beautifully painted by the Divine Hand, often of a different pattern from that displayed on the outer surface. How elaborately finished are all God's works! How perfect in every part!

The Lepidopterous order of insects ranks next to the *Coleoptera*, or Beetles, in point of numbers; in England, where the variable and moist climate is certainly unfavourable to their increase, there are not much less than two thousand species: between two and three thousand of the Diurnal Lepidoptera alone, have been discovered and described all over the world; and of this division of the order seventy-five species inhabit Britain. At the end of the volume will be found a complete list of these, arranged according to their genera, with a specification of their times of appearance, and of the places they usually frequent.

A word or two, before I conclude, I would say on

BUTTERFLY HUNTING.

In a boy the desire to capture one of these beautiful insects that comes dancing and fluttering before his eyes, as if to invite pursuit, is natural and instinctive; off goes the cap without any other thought than how the prize is to be obtained; trampled flower borders, torn trowsers, even bruised limbs, are as nothing in the account, and probably he sits down at last, flushed, heated, tired, and disappointed; but it is only to start up again and renew the chase, should the same chance of a capture offer itself.

"Before your sight
Mounts on the breeze the Butterfly, and soars,
Small creature as she is, from earth's bright bowers
Into the dewy clouds."

And while you stand wondering what has become of the insect which seemed but now within your grasp, another brighter and more beautiful still issues from the variegated tulip cup, and as Mrs. Hemans has it "like an embodied breeze at play," wavers about amid the flowers; and off you go again in hot pursuit, like the child of Virgillia, in Shakspeare's play of "Coriolanus," but not like him, I hope, to get into a rage and destroy wilfully the poor fly, because you have a tumble or two in endeavouring to catch it. "I saw him," says Valeria to the boy's fond mother,

"run after a gilded Butterfly, and when he caught it, he let it go again, and after it again, and over and over he comes, and up again—caught it again; or whether his fall enraged him, or how 't was, he did so set his teeth and tear it; O, I warrant how he mammoocked it." This is by no means a pleasing picture, but I fear it is too often realized among young Butterfly hunters, who, if they do not get into a passion and designedly destroy the object of their pursuit, frequently do so accidentally in their efforts to secure it. So delicate and fragile is the creature, that but the brush of a cap, or the slightest pressure of a finger, will, if it crush not that wonderfully organized frame, and render it lifeless, take away much of its beauty, and with it, no doubt, much of its capacity for enjoyment. And after all, if their efforts are crowned with success, how poor is the prize gained. The poet Byron has some beautiful lines on this subject which I should like you to read:—

"As rising on its purple wing
The insect queen of Eastern spring,
O'er emerald meadows of Kashmeer,
Invites the young pursuer near;

And leads him on from flower to flower,
A weary chase, and wasted hour,
Then leaves him as it soars on high,
With panting heart and tearful eye."

The poet thus, after saying, which is true, how full-grown children, that is men, are lured by things, which, if as beautiful, are also as fragile as Butterflies, supposes that the prize is gained, and goes on—

"The lovely toy so fiercely sought,
Hath lost its charm by being caught,
For every touch that woo'd its stay,
Hath brush'd its brightest hues away,
Till charm, and hue, and beauty gone,
'Tis left to fly or fall alone."

We have heard of an enthusiastic entomologist who followed a Butterfly for nine miles, in the hope of capturing it; and this must be set down to the account of ardour in scientific investigation. Not all grown Butterfly hunters, however, would we hold so excused, many, very many, more unfortunate insects are swept down with the net, and pinned out in the collecting case, than are required for the purposes of science; and this wholesale destruction of insect life we think scarcely compatible with that abhorrence of cruelty, and reverence for the works of the Great Creator, which is enjoined by Him

"Who formed the gilded fly, and o'er its wing
A picture, decked in rainbow colours, drew;
To sport amid the sunshine of the spring."

My young readers must not suppose from this that I would harshly condemn in them that love of Butterfly hunting which is

common to all children. I have felt it myself, and know how strong is the temptation to follow "the painted toy." There is perhaps no prettier sight than such as that described by Grahame, in his poem on July, when

"At noontide hour from school the little throng
Rush gaily sporting o'er the enamelled mead,
Some strive to catch the bloom-perched Butterfly;
And if they miss his mealy wings, the flower
From which he flies the disappointment soothes."

In gazing on such a scene as this, I become a boy again, and am half-inclined to join in chase myself, and to whoop and halloo with the maddest there; but then the thought occurs—would it be right to risk even doing injury to a creature so wonderfully fashioned, and to shorten the little span of its joyous existence. Let this thought restrain your hand; run and leap as much as you like, it is natural to your age and good for your health to do so, and follow

"The little fly with wings of sunbeams,"

from end to end of the green meadow, but do not attempt to catch it; let it be to you as a sacred thing, sent by God to beautify the earth, and delight your eyes, but by no means to be wantonly injured or destroyed.

I should like to repeat to you many beautiful poems which have been written on the Butterfly, and many striking observations that have been made on it by naturalists, such as Messrs. Kirby and Spence, whose admirable work on Entomology I hope you will read when you are older, but I cannot do so now, as my book is but a small one, and I shall want all the available space to describe the species of which figures are given. In the poems above spoken of allusion is sometimes made to the Butterfly as a fop—a light careless thing; thus Thompson says—

"While a gay insect in his summer shine,
The fop, light fluttering, spreads his mealy wings."

The same poet too, in his "Castle of Indolence," speaks of it as an emblem of pleasure:—

"Behold! ye pilgrims of the earth, behold!
See, all but man with unearned pleasure gay;
See her bright robes the *Butterfly* unfold,
Broke from her wintry tomb in prime of day,
What youthful bride can equal her array?
Who can with her for easy pleasure vie?
From mead to mead with gentle wings to stray,
From flower to flower on balmy gales to fly,
Is all she has to do beneath the radiant sky."

Leaving unquoted those fanciful lines by Roscoe—"The Butterfly's

Ball," and "The Butterfly's Funeral," with which many of my readers must be familiar, as well as other Butterfly poems which I have at hand, I will conclude this Introductory Chapter with some lines by the quaker poet, Bernard Barton, who thus addresses the bright insect.—

BEAUTIFUL creature, I have been
Moments uncounted watching thee,
Now flitting round the foliage green
Of yonder dark, embowering tree;
And now again in frolic glee,
Hov'ring around those opening flowers,
Happy as nature's child should be,
Born to enjoy her loveliest bowers.

And I have gazed upon thy flight,
Till feelings I can scarce define,
Awakened by so fair a sight,
With desultory thoughts combine
Not to induce me to repine,
Or envy thee thy happiness;
But from a lot so bright as thine
To borrow musings born to bless.

For unto Him whose spirit reads
Creation with a Christian eye,
Each happy living creature pleads
The cause of Him who reigns on high;
Who spann'd the earth, and arch'd the sky,
Gave life to every thing that lives,
And still delighteth to supply
With happiness the life he gives.

This truth may boast but little worth,
Enforc'd by rhet'ric's frigid powers:—
But when it has, its quiet birth
In contemplation's silent hours;
When summer's brightly peopled bowers
Bring home its teachings to the heart;
When birds and insects, shrubs and flowers,
Its touching eloquence impart.

Though many a flower that sweetly deck'd
Life's early path, but bloom'd to fade:
Though sorrow, poverty, neglect—
Now seem to wrap their souls in shade;
Let those look upward, undismay'd,
Turn thorny paths in anguish trod,
To regions where—in light array'd,
Still dwells their Saviour and their God.

Sport on then, lovely summer fly,
With whom began my votive strain:—
Yet purer joys *their* hopes supply,
Who, by Faith's alchemy, obtain
Comfort in sorrow, bliss in pain,
Freedom in bondage, light in gloom,
Through early losses, heavenly gain,
And life IMMORTAL through the Tomb.



BEAUTIFUL BUTTERFLIES.

SWALLOW-TAIL.

PLATE I.—FIG. I.

PAPILIO MACHAON is the name applied by Linnæus and most naturalists to this large and beautiful species of Butterfly; the meaning of the first, or generic name, has already been sufficiently explained; the second, or specific name, has reference, it is likely, to the peculiar shape of the two lower wings of the insect, from each of which issues, as will be seen by a reference to the plate, a projection shaped like a dagger or knife, the Latin word for which is *Machera*. There are only two British Butterflies which have wings of this singular form; and it is likely that few of my readers have seen either of them, except, perhaps, in the cases of the British Museum, or some other entomological collection. The species to which our attention is now directed, is the largest Butterfly found in Britain, sometimes measuring as much as three inches and three-quarters across the expanded wings, of which it will be seen the ground colour is yellow, with black markings; these markings being remarkably bold and distinct, and the broadest of them being powdered over with very small dots, which look like gold dust; and some of the yellow portions have a like sprinkling of little blue dots; on each hind wing, as it is called, is a patch of a rich purple colour, and on the inner side a red spot like a fiery eye. The body of the insect is like black velvet powdered with gold; and altogether it is so richly dressed, so gracefully formed, and so large of size, as well to deserve the title bestowed upon it by one naturalist, named De Geer, of *Papilio Regina*, the Queen Butterfly. And where think you does her Queenship delight to hold her court? On the sunny uplands, and in dry pastures, gay with Nature's gold and

silver—the buttercups and daisies? Nay, amidst the moist fens and reedy islands, which abound in the shires of Lincoln, Cambridge, and Huntingdon; there it is that the Swallow-tail Butterfly is most plentiful, and may be taken from the beginning of May to the end of August, by those who are venturous enough to follow it into the swampy grounds, amid which it delights to dwell. Here, too, may be found the beautifully-marked green and yellow Caterpillar, with its black bands, and rows of little rings like eyelet-holes across the back, feeding away upon the marsh parsley, the wild carrot, and the fennel, and other plants which flourish in such moist situations. From June to September is the feasting time; in the latter month the change into a chrysalis takes place, and a curiously-shaped case it is that the voracious feeder goes to sleep in—all points and angles, of a light green colour, with yellow marks, and a row of dusky dots down each side.

There are several English counties besides those before named in which this Butterfly has been found, but in none of them is it so plentiful as in those low and moist districts—

Where the dragon-flies dart 'mid the rustling reeds,
And the great sleek water-rat builds and breeds;
Where the moorhen glides through the waving sedge,
And leads her young to the marshes' edge;
Where the stagnant pool is with duckweed green,
And gnats rise in clouds when the air's serene;
And the alder grey like a sentry stands,
To warn men's feet from the swampy lands.

Since the draining of the fens in Lincolnshire, and other parts of the country, it is said that the beautiful Swallow-tail has become less plentiful, and a fear has been expressed that entomologists may in time lose this most conspicuous ornament of their cabinets. Well, better so than suffer such waste and barren spots to remain uncultivated; such nurseries of fever and pestilence to send forth their unhealthy exhalations, and spread sickness and death throughout the surrounding districts. Wholesome food and pure air for man is of far more consequence than the preservation of an insect, however beautiful and rare; so let them drain Whittlesea Mere, as they have lately been doing, and turn the fens into farms, where something more than flocks of cackling geese can be bred and fed;

even although the race of Swallow-tails should become extinct in consequence. But we have little fear of this; for many centuries to come there will be marshy waste places, where umbelliferous plants, such as the wild parsley, carrot, and fennel, grow and flourish, and where, if anywhere, one may expect to find this Queen of British Butterflies, in company, perhaps, but this would be a rare chance indeed, with the SCARCE SWALLOW-TAIL, called by naturalists *Papilio Podalirius*, of which but a few specimens have been taken in England. Why it was called *Podalirius*, we cannot tell,—this was the name of a son of the ancient Greek physician, Esculapius. Both in shape and markings this insect differs considerably from the more common kind—the wings are more pointed and slender; there are no red eyes in the lower ones, nor patches of purple, but dark blue spots shine on each side in the place of them. The Caterpillar is shorter and stouter, green with yellow and red markings. It is said to feed on the leaves of the apple, sloe, plum, peach, and almond; the chrysalis is light brown.

MARBLED WHITE.

PLATE I.—FIG. II.

Papilio, or *Hipparchia Galathea* is the Latin name of this species. You will remember what I told you about the *genera* into which naturalists have divided the members of the animal and vegetable kingdoms. *Hipparchia* is a *genus* of Butterflies including many species, of which this is the largest, and perhaps also the handsomest; most of the other differs from it greatly in the colours of the wings, which are brown of various shades, sometimes tinged with red, and sometimes with dusky yellow. The Caterpillars are nearly always green, more or less marked with yellow, and sometimes with red. They feed on different kinds of grasses; that called the cat's-tail grass being the favourite food of the larva of the Marbled White, which obtains its English name from having its wings chequered and veined as we sometimes see marble; these wings, however, are not, strictly speaking, white, but a pale yellow; in some there is

a much greater proportion of black than in others.

But we have got something more to say about the scientific title. *Hipparchus*, we find, was the name of an ancient astronomer; but why it applied to this genus of insects we cannot tell. A group of crustaceous animals, or shell-fish, has had the term *Galathea* given to it by some naturalist, but why, our reading does not inform us, any more than it does wherefore a certain species of Butterfly should be so called. *Lac* is the Latin, and *gala* the Greek, for milk; hence we have *galaxy*, that collection of stars in the heavens called the milky way; *Galactites*, precious stones, of a milk-white colour, etc. The wings of this beautiful fly are of a milky, or rather of a creamy tint, and hence perhaps may have originated the specific name of the insect, which appears in its perfect state in the months of June and July.

It may be found in every county in England, although only in certain spots, or localities, as they are called; usually in lonely places, in and near woods, or on wide open downs or moors. It measures from one to two inches and a half across the extended wings; the Caterpillar is about an inch and a quarter long, with yellow stripes running along the sides of its thick, green body; the chrysalis is scarcely half the length, of a light brown colour; it is usually found suspended from the stalk of the cat's-tail, or some other grass.

SCOTCH ARGUS.

PLATE II.—FIG. I.

Hipparchia Blandina. This is a very beautiful, although at first sight it appears a sober-coloured Butterfly; the wings, of a rich brown, ornamented with veins and patches of bright copper-colour, and beset with small eye-like dots, are well deserving of a close examination. They measure, when extended, from an inch and a half to two inches across, and their outline is at once bold and graceful; the under sides of the hinder pair, seen when the insect is at rest, have on them two broadish waves of a grey tint, and both pairs on either side are margined with yellowish brown, which being crossed

with darker lines, looks like a delicate fringe.

This insect, which is not uncommon in many parts of Scotland, especially the southern counties, has also been captured in Northumberland, Durham, and Yorkshire, as well as some other parts of England, in which country, however, it is by no means plentiful.

The Caterpillar is light green, with brown and white stripes, running lengthwise, these would be termed longitudinal stripes; the head is of a reddish colour; what it feeds on does not appear to be known; nor as far as we can learn, has the chrysalis been discovered.

Respecting the name, we can only say that Argus refers to the little spots on the wings, that being the designation in the ancient mythology of one who is said to have had a hundred eyes; so we say of a very watchful person, like your schoolmaster, for example, that he is argus-eyed—he sees everything. But for that matter, *all* Butterflies are Arguses, for, as I have already shown, they have each a great many more than a hundred little reflecting lenses; to these real eyes, however, the term does not refer, but to the eye-like rings with dots in the centre, which appear in the wings of this and many other species. The Wood Argus (*Hipparchia Aegeria*), and the Arran Argus, (*H. Ligea*), are two of these; the latter closely resembles the one we have just described. It is very rare in Britain, having only been found in the Scottish Isle of Arran, from whence it takes its name. The former is an elegant fly, with dark brown wings, speckled with buff-colour, from which the little eyes peep out; the under sides are much lighter, beautifully streaked and mottled. This insect is found in woods and lanes all through the country, from April to August. It is sometimes called the Wood Lady, or Speckled Wood Butterfly.

We have before mentioned three generic names—*Blandina*, *Aegeria*, and *Ligea*, to what do *they* refer? The nearest approach we can make to the first, in the Latin, is *Blandusia*—the name of a fountain near the country seat of the ancient Roman poet, Horace. Bland, you know, in our language, means soft, smooth; and this comes from a Latin root having the same sound and signification.

Aegeria, in the old mythology, was the name of a discon-

solate maiden, who took to crying so, that it was thought best to make her a fountain at once; and so travellers tell of the grotto of *Ægeria*, near Naples, whose trickling waters do not taste at all like salt tears.

Ligea was the name of one of the Nereides; and who are they? you may well ask; Oh, they were nymphs of the sea, fifty of them, and all sisters—a nice little family; they lived in grottoes and caves on the sea-shore, all decked with shells and shining spars, and when they went out for an airing, they rode upon dolphins. They had the power of calming the waters, and so sailors in old times used to pray to them for prosperous voyages. But what has all this to do with Butterflies? I am sure I do not know; ask the grave naturalists who gave such pagan out-of-the-way names to our little brown Arguses, and led us away into the region of myths and fables.

WHITE ADMIRAL.

PLATE II.—FIG. II.

Papilio, or *Limenitis Camilla*. This is an insect most usually found in the shady woodlands of Essex, Sussex, Hampshire, Suffolk, Kent, and Middlesex; it is by no means a common species in any part of England, and is remarkable rather for grace and elegance of form than richness of colour. The wings, which, when expanded, sometimes measure as much as two inches and a half across, are, on the upper side, of a dull brownish black, with a broad band of white crossing each; this is very irregular in shape, and varies considerably in breadth in different individuals; there are also white specks scattered here and there about the wings, the under sides of which are of a light reddish brown, with the white markings of the upper sides showing through; near the body of the insect, they become of a grey tint; the back and upper parts of the body also assimilate to the outer surface of the wings in hue.

The Caterpillar, which feeds on the honeysuckle, is from an inch to two inches long; of a green colour, ringed and ornamented with faint red lines, and tufts of hair along the

back. The angular-shaped chrysalis is pale brown, marked with black lines and golden spots. It has a curious projection, like a knob, on the back, and where the head of the insect is are two distinct lumps. It is found suspended by the point to a honeysuckle or some other stem.

English naturalists, we believe, have not been fortunate enough to discover this gilded mummy case, although many a hunt has taken place in the hope of doing so; neither has the insect in the larva state been found in this country. Those few who have been fortunate enough to have opportunities of observing the fly on the wing, have been struck with the peculiar grace of its movements. Thus the Rev. Mr. Haworth, says, "The graceful elegance displayed by this charming species when sailing on the wing, is perhaps greater than can be found in any other we have in Britain." And the Rev. Everett Sheppard tells us that "In its beautiful flight, when it skims aloft, it rivals the Purple Emperor, which it strongly resembles in appearance. It seems, however, (unlike the latter,) to avoid the sunbeams; for it frequents the glades of woods, where it rapidly insinuates itself by the most beautiful evolutions and placid flight through the tall underwood on each side of the glades, appearing and disappearing like so many little fairies," and seeming, as the Rev. gentlemen might have added, to say to the pursuer,

"Through the wood, through the wood, follow and find me,
Search every hollow, and dingle, and dell."

With respect to the scientific name, it may be observed that *Limenitis* may have reference to the flashing appearance of the white bands on the wings, as the insect flits about in the dusky glade; *leme* being an old English word, signifying a ray or flash. *Camilla*, in the mythology, was the name of a queen of the Volschi, so swift of foot, that she could pass over a field of corn without bending the ears, and over the sea without wetting her feet. We should rather believe that our dusky-winged *Camilla* could do this than the Volschian queen, however swift-footed she might have been.

This insect, we are told, is not rare on the continent of Europe, where there are four other species belonging to the same genus, and closely resembling it.

RED ADMIRAL.

PLATE II.—FIG. III.

Papilio, or *Vanessa Atalanta*. This large and magnificent Butterfly is by no means uncommon. It comes out of the chrysalis in August, and may frequently be seen flitting from flower to flower in the garden, seeming to prefer the large globe-like dahlia and the little green blossoms of the ivy, two very different objects of regard; doubtless, however, the nectar of the one is as sweet as that of the other, and little need the gaily-dressed insect care about richness of colour, for he has that himself; look at him now, as he sails proudly in the autumn sunshine, which seems to sink into the soft velvety down of his rich brown wings, and give them a golden gloss.

The colour is deep, approaching to a black, and across the middle of each upper wing a painter seems to have drawn his brush filled with the brightest vermillion; along the bottom edge of the lower pair, there is also a band of the same colour dotted with dark brown or black; there are several irregular white specks on the upper ones towards the angles of their widest expansion, where they measure in some instances as much as three inches across; near the tips is an indistinct wave of purple, which catches the eye in certain lights, and all round the margins of both pairs is a fringe of white arranged like a chain of little crescents.

The inner sides of the wings can hardly be described; they are beautifully mottled and variegated with black, brown, buff, steely blue, and other metallic tints; the ground colour is lighter than that on the outer side, the red and white markings of which gleam through like flashes of different coloured flame.

Oh, a glorious fellow is the Red Admiral! and so bold and fearless, too, as an admiral should be; you may come close up to him as he sits sunning himself upon the flowers, and examine him at your leisure; but do not attempt to touch him, unless you really want a good specimen for your cabinet; and even in that case, it is better, perhaps, not to risk the spoiling of these magnificent wings, but to search for a caterpillar: they are not difficult to find among the nettles where

they feed. The colour is a dusky green, with a yellow line running along each side; it is sparingly covered with short hairs, and its length varies from an inch and a quarter to one and three-quarters; it often conceals itself by drawing together several of the nettle leaves by means of silken threads.

When you have captured it, give it some of the seeded tops of the plant, for this is the part which it seems to prefer. By and by it will turn into a chrysalis of a greyish brown colour, having golden spots sprinkled over it; the back is rough and ridgy, the tail end sharply pointed, and the opposite end bearing a remarkable resemblance to the snout and head of a miniature pig.

It is generally at the latter end of August or beginning of September that this beautiful fly makes its appearance, in its new suit all fresh and glossy, and it generally disappears by the end of October; a few, it seems, manage to get into some snug hole or crevice, and live through the winter, coming out again for a short time in the spring, but with wings sadly rubbed and faded—insects which “have seen better days.” Usually, however, the life of the gallant Admiral is, as short as it is, no doubt, merry.

But why is it called *Vanessa*? why *Atalanta*? Let us see if we can find it out. The first you know is the generic name, and the genus to which it is applied includes some of the most common, as well as the most beautiful of the British species; several of them we shall presently describe. Our business is now with the Red Admiral, or Alderman, as he is sometimes called, because, perhaps, aldermen once wore, and in some places still do wear, scarlet gowns edged with brown fur, making a mixture of colours something like the wings of this noble fly. But what about *Vanessa*? well, here again we are at fault; we can find no name, proper or common, no Greek or Latin root, at all like it, except *vanesco*—to vanish—in the Latin tongue, and therefore must give it up.

Atalanta I could tell a long story about, did I wish to entertain my young readers with old fables; she, too, according to mythological story, was one of the swift-footed, and did some very wonderful things, how many hundred years ago I am afraid to say; and now, that her name may not be clean forgotten, which I think it might just as well be, naturalists

have bestowed it upon this gorgeous insect, although it appears quite a misnomer, as the Admiral is rather a heavy flyer for a Butterfly, and the English name which he bears is that of a gentleman, and not a lady.

All the flies of the *Vanessa* genus are remarkable for their robust bodies, and the thick texture of their wings; they are strong and handsome, rather than light and elegant; that is, comparatively speaking, for lightness and elegance are inseparable from the whole race of diurnal Lepidoptera.

PEACOCK BUTTERFLY.

PLATE II.—FIG. IV.

Papilio, or *Vanessa Io*. We have here another magnificent species, on which many of my readers must have often looked with intense admiration, for it is common enough throughout the greater part of England, especially in the more southern counties; it gets rare towards the north, and in Scotland is seldom found. Old writers called this Butterfly *Omnium regina*, that is the Latin for Queen of all, and we ourselves are half-inclined to rank it before all others for beauty and richness of colouring.

It is scarcely so large as the Red Admiral, seldom measuring more than two inches and a half across the expanded wings, which are of a rich dark brownish red, the upper pair several shades lighter than the lower; at places there is an inclination towards a purple shade, and a large eye, or, as naturalists call it, an *ocellus*, from the Latin word *oculus*—an eye, covers a considerable portion of each of the four wings; being situated, in the upper pair, near the extremities farthest from the body, and in the lower, also near the tips and outer margins; these *ocelli* are much like the many-coloured spots on the tail of the peacock, and hence the insect has been named after the bird.

Io was the name of a heathen goddess, about whom there is told a cock-and-a-bull story, not worth repeating, more especially as we cannot learn that it has any relation to the habits or appearance of the insect to which the name is applied,

and the under side of whose wings are very different from the outer, being of a uniform dark brown colour, traversed by black waving lines, which form a complete net-work, through which, like stars through a mist, the blue and white spots on the outer sides faintly peep. The body of this insect is blackish, clothed with rust-coloured hairs, and the legs are of a dull yellow colour.

The Caterpillar is also black, or nearly so, with numerous white points dispersed in rows across the body, which is partially covered with hairs; the legs are a rusty red. Its habits are gregarious, that is, numbers live and feed together; it feeds on two very common species of stinging nettle, amid which it may be found without much difficulty about July.

The chrysalis is, both in shape and colour, much like that of the Red Admiral; there is something more of a green tinge in it, and the indentations along the back are deeper. The resemblance of the thicker end to the head of the swine is also more marked and distinct, and piggy here appears to be adorned with two stick-up ears, which is not quite in accordance with swinish fashion.

LARGE TORTOISE-SHELL.

PLATE III.—FIG. 1.

Papilio, or *Vanessa Polychloros*. The Tortoise-shell Butterfly is one of the commonest of our native species, but the Great Tortoise-shell, or Elm Butterfly, as it is sometimes called, must not be confounded with this; it is larger, handsomer, and also very much rarer; in the colours and markings of the two species there is not a great deal of difference; neither is there in the shape of their wings; the smaller is perhaps the more graceful of the two; the larger the more bold and noble—more rounded and full, and sturdy, so to speak, as though one were the personification—bless us, that is a long word—well then, the figure, the shewing forth of manly beauty, and the other of womanly loveliness. If we saw the two flying together, we might take them to be brother and sister, so

great is the family likeness, and yet they are quite different species, although belonging to the same genus; and a naturalist would never take one for the other, however closely they might approach in size, as they sometimes do. Oh, these are sharp fellows, these naturalists; we sometimes fancy that they have microscopic eyes, that is, that they carry microscopes in their heads as well as in their pockets; they can detect such minute points of difference, and so quickly too. 'They can see things that nobody else can see, and they tell such wonderful stories about the creatures that inhabit drops of water, and grains of sand, that one is at times inclined to think they have only been dreaming, and ought to begin their almost unbelievable stories with the line of the poet Coleridge—

"In a vision once I saw."

But then they tell us how we may convince ourselves of the truth of their statements, and bid us look through their glasses at some of the monsters of the invisible world, which are frightful enough in pictures; but all alive and kicking, are, oh dear! enough to make a nervous person go clean out of his senses—"off his head," as they say in some parts of England.

One of these days I mean to write a little book for your instruction, all about the animalcules, and the uses of the microscope, and then we will get our engraver to serve you up such a dish, or rather a number of plates, of odd-shaped creatures, which inhabit the world out of sight, that if you won't be startled and surprised, that's a pity!

But what is our *Vanessa Polychloros* doing all this time? enjoying himself in the sunshine no doubt, like an idle fellow as he is, for the song says, you know that

"The Butterfly was a gentleman
Of no very good repute,
And he roamed in the sunshine all day long,
In his scarlet and purple suit."

There he goes fluttering, fluttering, with his gaily-painted wings spread out, with the tips as much perhaps as three inches apart, without appearing in the least incommoded by the long name he carries about with him, and which, if he should let

it fall so as to break it into two halves, would turn out to be made up of the Greek words *Polus*—many, and *Chloros*—spot, so that it means, literally, many-spotted; and this we must confess to be a very appropriate title, better than all the *Atalantas* and *Camillas*, and such like proper, or rather improper, names of fabulous persons. It was most likely on a bright July day that the Great Tortoise-Shell Butterfly—you know why he is called *that*, because he is marked like the shell of a tortoise—burst from his chrysalis prison, and he will most likely leave this gay and busy scene before the end of September; either dying, as is generally the case, or stowing himself away in some nook or cranny, where his superb wings can be kept dry for a little spring exercise, should the weather prove at all genial; they get however sadly rubbed and rumpled, and cannot be made to look like new by all the dyers and scourers in Butterfly land. I shall not attempt to describe these wings, for all my readers have seen the Small Tortoise-shell fly, and often enough to know every marking; should any of them unhappily belong to that class of persons who go about the world with their eyes shut, they can open them for once, and look at the beautiful pictures with which our artist has illustrated this volume, and they will see at a glance what it would take many words to express in a very imperfect manner. The under side of the wings is a dull brown, approaching to a black, with here and there a streak of blue, and waving lines of dusky white, and irregular bands of deeper colour.

The Caterpillar of this species may be found most usually on the leaves of the elm tree, where they feed, numbers of them together, under little silken tents, spun out of their own bodies; their colour is a bluish brown, and along each side runs a broad band of orange, which, with numerous tufts of yellowish hair, gives them quite a gay appearance. After the first change of skin, they break up their family parties, and disperse to seek their livelihood singly; they are sometimes found on the willow and several kinds of fruit trees, especially the cherry.

The chrysalis is brownish flesh-colour, with golden spots. It has the peculiar conformation at one end mentioned in the two preceding species.

This Butterfly is to be met with in all the southern counties

in England; in some years it occurs in large numbers in particular places, but not so regularly as to be called a common fly anywhere in this country, where its near relative, the Small Tortoise-shell, is very abundant.

SMALL TORTOISE-SHELL.

PLATE IV.—FIG. I.

THIS is the *Papilio*, or *Vanessa urtica* of naturalists, and when I tell my readers that the Latin for nettle is *urtica*, and that the Caterpillar feeds upon nettles, they will at once see the fitness of the title. This Caterpillar is found in the beginning of June, and again about the middle of August. In the early stages of its growth it is gregarious like the larva of the last species; the body is a dull greenish brown, with paler lines down the back and sides; the head black, as are also the tufts of hair; the chrysalis is brownish, and shaped much like that of the larger species. It is sometimes nearly covered with gilding, and is generally suspended by the smaller end.

Everywhere in this country, and throughout the whole of the summer, one sees the Little Tortoise-shell Butterfly, of which species there appears to be two goal deliveries in the year, one in June, and the other in September, so that by the time one batch of released prisoners dies out, another comes to take its place, and thus the summer sunshine glanceth ever upon Tortoise-shell wings, and frequently the spring sunshine too, for more of this species than of any other manage to preserve life through the rigours of the winter, and they venture forth, when the blasting March gales have sunk to rest for a time, and the sun has melted the snow from off the hills, and the primrose blossoms, and the violet buds are just beginning to unfold their fragrant petals in woods, and on mossy hedge-row banks. But full often do they share the fate of the venturous insects described by the Peasant Poet of Northamptonshire. John Clare, who says,

“The Butterflies, by eager hopes undone,
 Glad as a child, came out to meet the sun,
 Beneath the shadow of a sudden shower
 Are lost, nor see to-morrow’s April flower.”

The same poet we remember, has another allusion to the Butterfly making its appearance in March, much to the delight of the old village dame; in this case, however, it is one of the white species spoken of, most likely the Common Cabbage Butterfly, (*Pontia brassicæ*), which sometimes comes out very early.

“The old dame then oft stills her humming wheel—
 When the bright sunbeams through the windows steal
 And gleam upon her face, and dancing fall
 In diamond shadows on the pictur’d wall;
 While the White Butterfly, as in amaze,
 Will settle on the glossy glass to gaze—
 And smiling, glad to see such things once more,
 Up she will get and totter to the door.”

CAMBERWELL BEAUTY.

PLATE III.—FIG. II.

Papilio, or *Vanessa antiopa*. This is the crowning glory of the British Butterfly collector’s cabinet, and a happy man is he who gets a perfect specimen of an insect which is at once so rare and beautiful. It measures across the expanded wings from a little under, to considerably over, three inches; and is therefore one of the very largest of the native species, from all of which it differs greatly in shape, and still more in colour. Deep purplish brown, of a rich velvety appearance, is the tint spread over nearly the whole upper surface of these wings; round the outer edges this colour deepens into a broad black band, which is ornamented with a row of violet blue spots, some of which are oblong, some of a crescent shape; attached to this band is what looks like a wide silken fringe, of a pale yellow or cream-colour, slightly waved on the inner side, and sprinkled with little black dots at the angles; the top edges of the upper pair are slightly mottled with yellow, and on each, near the tip, are two spots of the same. Underneath the wings are a shining ashy brown, with a net-work

of black waved lines all over them; the yellow spots, so distinct on the outer side, showing faintly through.

The Caterpillar is large, and black with red spots along the back, and reddish legs; it is thinly furnished with clusters of hairs. It is gregarious, and feeds upon the leaves of the birch, willow, and poplar; and is said to be most usually found among the upper branches of these trees. The chrysalis is of a dull black colour, spotted with deep yellow, and of a very irregular shape. In neither the larva or the pupa state has the insect been found, we believe, in this country, where its appearance occurs, except just here and there a single specimen or two, at long and uncertain intervals. About eighty years ago it was seen in great numbers in many parts of the kingdom; and again in 1819, but not since then, although almost every year one or more specimens are taken or seen.

This fly obtained its common name from having been first observed in the neighbourhood of Camberwell, in the county of Surrey; it is also sometimes called the Grand Surprise, and the White Border. The scientific name will take us again among the heathen gods and goddesses. *Antiope* we are told was a daughter of Nycteus, king of Thebes, who went through a variety of strange adventures, of the account of which we can only say, that if it is altogether false, so much the better; for little as we like story-telling, what this *Antiope* is said to have done, we like far less. The fair Camberwell Beauty—the loveliest of British Butterflies—is by no means complimented in having such a name bestowed upon her.

We cannot refrain from quoting here a passage from a monthly publication called “The Naturalist,” wherein this Butterfly is very touchingly and pleasingly alluded to; our young readers, we have no doubt, will fully enter into the feelings and associations there expressed:—

“It was on a summer evening, of early life, when little more than a child, in rambling through a wood on a holiday, my attention was drawn to a spray on which rested a Camberwell Beauty. I had never seen such perfection before. My eye rested on the rich dark velvety wings, fringed with ermine white, relieved by an inner border of metallic blue spots, like bracelets of *lapis lazuli*. At this moment I could mark the very spot in the forest where this vision was revealed, and

well do I remember the thrill of delight with which I captured and carried off my prize in triumph, to exhibit before a little knot of schoolfellows. I can see their uplifted hands, I can hear their exclamations of surprise, as they beheld the splendid captive. I can recall their features and their forms as if now living, though every individual among them has long since been called away, and now possibly familiarized with greater things than it is permitted man's philosophy to dream of here.

But to me, trifling as this little incident may appear to many, the results through life have been neither unimportant, useless, or uninfluential; for it is to it I stand indebted for many a happy hour. That 'poor insect' awakened a taste which has never slumbered; and the cultivation of Natural History has been my solace in times and seasons, when the mind required something to fall back upon, apart from the business and pursuits of the world. It so happened that from the time I have alluded to until a few summers ago, in one of the mountain passes of the Pyrenees, I had never met with a single living specimen of *Vanessa antiopa*, when, on a lovely day, on a spray the very counterpart of that of the days of my childhood, I saw the expanded wings of this insect, and the days of 'auld lang syne,' which first introduced it to my notice, came across my mind vivid and clear as though but of yesterday. This summer, again (and not unfrequently) I fell in with this associate of my early years. Children, indeed, may they be called of the sun. In the hot and sultry hours of noonday, they would flit by, rendering it almost impossible to watch their course; if in these flights two or three met in a glade, they paused in their speed, and fluttering together, so busied themselves in conflict of rivalry or affection, I know not which, that I more than once caught two at a time, and after admiring them, in gratitude for the benefit I had received at their hands, sent them forth once again to enjoy their summer revelries. At other times, (I particularly recollect one occasion,) in a wood on the summit of the Drachenfels, when the wind was rather keen, I found numbers resting on the backs of trees, in a state of stupor; they made no attempts to escape, and when thrown into the air their wings barely opened, or flapping feebly, eased their fall, or enabled them to seek repose on the stem of a rotten trunk."

COMMA BUTTERFLY.

PLATE V.—FIG. I.

Papilio, or *Vanessa C-album*. This curious Butterfly is distinguished from all other British species, by the deeply cut or indented outline of the wings; which, forming the kind of curve presented by the stop called a comma, gave occasion for the name by which it is commonly known. Naturalists we find term it *C-album*, the latter term meaning white; because there is marked on the under side of each of the lower wings a letter C in white, as distinctly on some individuals as though it had been painted in. This is a very singular distinctive mark, the like of which is to be found, I believe, on no other member of the Butterfly tribe.

The Comma is the smallest species of the *Vanessa* genus which inhabits Britain, the utmost extent of the wings seldom exceeding two inches; in colour it closely resembles the Tortoise-shell Fly, being reddish brown and black; there is, however, less variety in the shades and markings. The under sides of the wings are in some instances elegantly variegated with brown and grey of various shades, and metallic green; in others they are of an uniform dull brown, which held in different lights has a bronzy appearance. There are two broods of this fly in the year, one coming out in June, and the other in August or September; and it has been observed that the wings of the latter brood are much less bright and various in colour than those of the former.

The caterpillar, which feeds on the elm, willow, honeysuckle, hop, nettle, and several other plants, is of a reddish brown, rather thickly set with hairs, and having a curious hairy projection on each side of the head, which is nearly heart-shaped. The chrysalis is a pale dirty brown, spotted with gold; shaped much like those previously described.

This is by no means a common fly in this country, that is generally speaking, for in some years it occurs in great plenty. York, Worcester, Dorset, Warwick, Suffolk, Gloucester, Herts, and Middlesex are the English shires where it has been chiefly taken. Also in Fifeshire, in Scotland, but in no other part of that country, except, perhaps, some of the southern counties.

A celebrated entomologist named Westwood, has observed a great variety in the shape of the wings of this insect, some not being nearly so deeply indented as others; so that there are Comma Butterflies, the outline of whose wings present rather the form of a note of interrogation, (?) as though they would bid the student in entomology to pause and ask himself, can it be a Comma or some other species; and so perhaps bring him to a semicolon, (;) or a colon, (:) or even a full stop. (.) While struck with the beauty of the insect, he will, it is likely, utter a note of admiration. (!)

PAINTED LADY.

PLATE V.—FIG. II.

Papilio or *Cynthia cardui*. The genus *Cynthia* into which we now pass, so closely resembles the *Vanessa* that it is considered by some naturalists as only a sub-genus or kind of lesser division thereof. *Cynthia* is a name sometimes applied to the moon, as it was to one of the fabled goddesses of the Grecian mythology, between whom and that enlightener of the night, there was supposed to be some mysterious kind of relationship. We have only two *Cynthias* in Britain, and one of these can hardly be called a native species, but a single specimen, I believe, having been taken in this country; of this I shall presently speak. Now let us examine into the merits of the Common Painted Lady, which is a truly beautiful fly, graceful in form, and harmonious, if not brilliant, in colouring. A reference to the plate will shew this better than any description, as far as the general shape and outer side of the wings are concerned; but a chief beauty of this fly consists in the marking of the under side, which looks like an exquisite piece of mosaic or inlaid work, in which the several pieces of red, orange, buff, olive, brown of various shades, black, and white, are nicely fitted in to form a diversified pattern, with small white veins dividing the compartments. Near the outer edge of the under pair is a row of four or five round spots, encircled with rings, so that they resemble eyes: on a close examination it will be seen that two of these are powdered in the centre with green,

and two with blue. Between these and the edge of the wing is a row of small purple crescent-shaped spots. Over the whole of the under side of the upper pair is spread a delicate crimson flash, like that which tells the approaching dawn of a summer's day. The body of the insect is clothed with reddish brown hairs above, and white beneath.

The Caterpillar, which is found generally in July, is of a reddish brown colour, with interrupted yellow lines along the sides; it is pretty thickly covered with hairs. It feeds upon thistles, nettles, mallows, artichokes, and several other plants, and lives singly. The chrysalis is light brown, with ash-coloured lines and golden spots; it is of an irregular angular shape.

The expanded wings of this insect sometimes measure two inches and three-quarters across. It is generally somewhat scarce in England, although it occasionally occurs in great abundance; in the year 1828 there passed over Switzerland a vast swarm of these flies, occupying several hours in the transit; two years previous to this the species was very abundant near London; it has been found in Ireland, and the more southerly of the Scottish countries.

SCARCE PAINTED LADY.

PLATE V.—FIG. III.

Papilio, or *Cynthia Huntera*. Of this fly but one specimen is recorded to have been taken in Great Britain, and that was at Withybush, near Haverfordwest, South Wales, in the mid-summer of 1828. It was thought to be but a variety of the common kind, but was afterwards discovered to belong to a distinct species, occasionally plentiful in America, where it is said the Caterpillar is found about the end of the months of April and July, there being two broods in a year. It measures about two inches and a quarter across the expanse of the wings, which both in colour and shape are much like those of the *C. cardui*. We should have explained, by the way, that this word means a thistle.

The wild balsam and a kind of cudweed, called the obtuse-leaved, are said to be the food of this species in the larva

state, Authorities differ as to the colour of its Caterpillar; its chrysalis we are told is "placed in the leaves of plants folded up and spun together," so says the Rev. F. O. Morris, in his beautiful work on "British Butterflies."

The markings on the under sides of the wings of this insect are yet more elegant and delicate than those of the last; there is also somewhat more grace and beauty in those of the upper surfaces, as will be seen by a reference to the plate.

PURPLE EMPEROR.

PLATE IV.—FIG. II.

Papilio, or *Apatura iris*. Ever has purple been the imperial colour, that of the robes of kings and emperors, and altogether great persons, there is a fitness therefore in the name of this king of British Butterflies, than whose wings no colour more rich and magnificent ever decked the shoulders of the mightiest monarch upon earth. To see these wings to perfection, it must be in the broad sunshine, and rather at a side-angle of the vision than looking directly at them; in any other than a strong light they appear dull and lustreless—a rusty, dingy, brownish black, with just a tinge of purple, and no more; but even then it appears a noble fly—stout-bodied and strong-winged, with a flight like that of a bird, far up amid and above the topmost branches of the loftiest trees; there it flies, and there it sits on some projecting spray in right royal state, and where is the puny entomologist that with rod and net shall reach it down from thence? But sometimes it descends from these elevated positions to sail majestically amid the glades and along the wood-side hedge-rows, and then is the time of danger to liberty and life. Mr. Morris tells us of one collector who stated that he took as many as one hundred specimens in the county of Essex in a fortnight. What an arch regicide he must have been. Who ever heard of such a king-killer as this? One hundred crowned heads in a fortnight! Here was a wardrobe! ten times ten sets of royal robes. Bah! we do not like to think about it; so many beautiful insects deprived of life; so

many bright flutterers stopped in the mid career of their enjoyments, for what? to satisfy a mania, as in too many instances the entomological furor may truly be called. May be he did it for profit; he dealt in Butterflies, and so depopulated the glades of Emperors to increase the value of his stock-in-trade. Well, we scarcely know that any valid objection can be offered to this; all we can say is, that we hope no such necessity for obtaining a livelihood will ever be laid upon us. We would not have such an amount of insect-slaughter upon our consciences for all the Butterflies in the British Museum, much as we should delight in the possession of a good collection of these most beautiful of the works of the Almighty Creator.

The scientific name of this fly is a bit of a puzzle. *Apatao*, in Greek, means I cheat, trick, or beguile; hence *Apaturia* was the name of a festival at Athens, instituted in remembrance of a stratagem, by which one king, who had challenged another to fight, put his opponent off his guard, and so killed him. One of the names of Jupiter we learn was *Apatenor*—the deceiver, and *Apate* is by one Greek author applied to a plant. What connection, real or supposed, there is between all this and the generic name of our splendid Emperor we cannot imagine.

With the specific name *Iris* we have no such difficulty. In the mythology the messenger of the gods was called by this name, and the rainbow, more poetically than truthfully supposed to be her pathway from the regions above to earth, was also so termed; hence the word *Iris* came to signify that which was rich and various in colour, especially such as shifted and changed in different lights, or as we should say was iridescent. The rich purple flag-flower we call an iris, and so do naturalists term this glorious fly, whose dark wings are so richly overspread with purple down, and which is that well described by a British entomologist named Haworth.

“The Purple Emperor of the British oaks, is not undeservedly the greatest favourite of our English aureleans, (Butterflies of which the chrysalides are marked with gold.) In his manners likewise, as well as in the varying lustre of his purple plumes, he possesses the strongest claims to their particular attention. In the month of July, he wakes in the winged state, and

invariably fixes his throne upon the summit of a lofty oak, from the outmost sprigs of which, in sunny days, he performs his aerial excursions; when the sun is at the meridian, his loftiest flights take place, and about four in the afternoon he assumes his station of repose. He ascends to a much greater elevation than any other insect, sometimes mounting higher than the eye can follow; especially if he happens to quarrel with another Emperor, the monarch of some neighbouring oak; they never meet without a battle, flying upwards all the while, and combatting with each other as much as possible; after which they will frequently return again to the identical sprigs from whence they ascended. The wings of this fine species are of a stronger texture than those of any other in Britain, and more calculated for that gay and powerful flight which is so much admired by entomologists.

The females, like those of many other species, are very rarely seen on the wing; in three days I captured twenty-three, (another regicide,) nine of them in one day, and never took a female at all. The males are only to be taken with a long net, fixed at the end of a rod twenty or thirty feet long. There have been instances, though rare, of their settling on the ground near puddles of water, and being taken there. When the Purple Emperor is within reach, no fly is more easily taken; for he is so very bold and fearless, that he will not move from his settling-place until you quite push him off; you may even tip the end of his wings, and be suffered to strike him again."

Here is the character of his majesty given with great truth and freedom; he is somewhat quarrelsome, it appears, as kings are apt to be; jealous of any intrusion upon his own territories. A bold proud insect, this Purple High-flier, as he is sometimes called, you see him there in the picture the size of life, and very life-like he looks, with the white patches beautifully relieving the otherwise heavy richness of his dark velvety wings, of which if you were to see the underside, a very different view would be presented; silvery grey, tawny orange, white and black, are there the principal colours, here fading off one into the other, there exhibiting strong contrasts and striking changes of hue. The Caterpillar and Chrysalis of this species are both green, of a fresh vivid tint; the former is marked with pale

yellow lines; it swells considerably at the middle of the body, and tapers off at the tail to a point; it is not hairy, and the head is black, with a couple of projections like horns sticking straight up, which gives it a very singular appearance. It may be found about the end of May, feeding on the broad-leaved sallow, and oak.

The Purple Emperor is chiefly confined to the southern counties of England; we do not hear of its being taken at all in the north. Yorkshire, Warwickshire, Hampshire, Northamptonshire, Middlesex, Suffolk, Surrey, Sussex, Kent, and Essex, are those divisions of the country where it has been chiefly captured; sometimes, as we have already shown, in great numbers: so that it can scarcely be called a rare fly. In several of the Kentish woods, not far from where this little book is written, it may be found at the proper season, but generally flying high out of the reach of the net, so that the captures are not numerous: the chrysalides are occasionally found, and the Caterpillars sometimes, but very rarely.

BROWN HAIRSTREAK.

PLATE VIII.—FIG. I.

Papilio, or *Thecla Betulæ* is the scientific name of this insect, which is the largest of the five British species contained in the genus *Thecla*—a pretty little family group, by no means remarkable for brilliancy of colour, the upper side of the wings being mostly brown; the under sides, however, are beautifully marked and pencilled with delicate wavy lines, like hair, hence the name Hairstreak, and spots and bands of yellow and white.

One species has the under side nearly all green, on another is a zigzag mark like the letter W; on one the wings approach nearly to a black, and one has a fine purple reflection playing over the brown ground colour. And so we have Purple, Green, White-W, Black, and Brown Hairstreak Butterflies, all of which have a little spike-like lengthening of the lower wings, which distinguishes them from the Argus, and most of the other smaller British Flies.

The specific name *Betula*, given to the Brown Hairstreak, has reference to the food of the Caterpillar; *Betula*, in Latin, signifying a birch tree. This species is not very common in England; it generally makes its appearance about the end of August or beginning of September, and may be taken mostly near oak or birch trees.

GREASY FRITILLARY.

PLATE VI.—FIG. I.

Papilio, or *Melitæa artemis*. The Fritillaries, although by no means the gayest in colour, are among the most beautifully marked of our native Butterflies; there are as many as twelve different species of them, five or six of which only bear the generic name *Melitæa*, derived, it may be, from the Latin *Milites*, a precious stone, of an orange colour—that tint prevailing more or less in all Butterflies belonging to this genus. *Artemis* occurs in the mythology as the name of a Greek goddess. *Artemesia* is found in ancient history several times: it is also the name of an extensive genus of plants, mostly remarkable for their bitterness, such as wormwood and southernwood, none of which however appear to be the common food of the Caterpillars of these elegant flies; that of the Greasy, or, as it is sometimes called, the Marsh Fritillary, feeding on the plantain and the scabious. The first of these names is derived from the peculiar shining appearance of the under side of the fore wings, which look as if they had been oiled; the last from the moist, marshy places in which the fly is mostly found. It is generally first on the wing about the middle of May, and may be seen as late as that of July, chiefly in the southern counties of England, but sometimes as far north as Durham and Northumberland. In Sussex, about Brighton; and Berks, about Enborne, it is said to be particularly plentiful. It measures across the extended wings from an inch and a half to two inches; these wings are of a reddish orange colour, crossed with wavy lines of black, and variegated with patches and spots of delicate straw-colour; the upper and under pair are much alike in their markings; they generally have a dark

brown border, and a fringe of silky grey for edging; the under sides are of lighter colours—cream, straw, and silvery grey, with the black lines shewing through, and little eyes peeping out here and there, and small crescent-like spangles, and faint waves like clear water or curling smoke, making the prettiest variety that can be imagined.

The Caterpillar is hairy, black above and yellow beneath, with a line of small white dots along the back, and another on each side: it has reddish legs. The chrysalis is dingy white, with brown spots and markings; it is generally suspended between several blades of grass, drawn together and fastened at the top. It is not so irregular in shape as many before described, nor is it marked with gold.

GLANVILLE FRITILLARY.

PLATE VI.—FIG. II.

Papilio, or *Melitæa Cinæia*. This, although not uncommon on the continent of Europe, is a rare fly in the British Islands. It has been found most plentifully amid the romantic glens and seaward-sloping hills in the Isle of Wight; also in Kent, near Dover and Dartford; and in the counties of Yorkshire, Warwickshire, Lincolnshire, and Wiltshire. May, June, and July are the months in which it may be looked for. It closely resembles the species last described in size and shape, but is somewhat different in colour, and in the arrangement of the markings; the cross lines are more regular, and beautifully waved, and the spots more numerous and distinct; the under sides of the wings are paler, having much of pale straw-colour, the black veins and spots of the upper side being clearly visible.

The Caterpillar of this species is black; it is faintly spotted with white, and has a red head and legs. It feeds on such wild plants as the narrow-leaved plantain, hawkweed, and common speedwell. An English entomologist, named Westwood, says that “these Caterpillars are found in the autumn living

in societies under a kind of tent formed by drawing together the tops of the leaves on which they feed, and covering them with a web."

The chrysalis is pale brown, spotted with orange; in shape much like that of the last species. It is always suspended by the tail end.

The specific name *Cinxia* probably comes from the Latin *Cinctus*—a girdle, having reference to the band-like markings of the wings of the perfect insect, the white dots on the larva, or the row of raised orange spots on the pupa case.

PEARL-BORDERED FRITILLARY.

PLATE VI.—FIG. III.

Papilio, or *Melitæa Euphrosyne*. This is a very beautiful little fly, although it has not much variety of colour: its markings are very regular, or what we should call symmetrical, that is, having a certain accordance or agreement with each other; veins, and spots, and crescents, and dashes of black, upon a deep orange ground, all as regular and even as though they had been traced out by means of rule and compass, and then carefully filled in by a very steady and practiced hand, and all round the outer edge, runs what seems to be a silken string of tiny pearls. It is indeed an exceedingly pretty fly, with its under wings like embroidered satin of yellow and pale brown, with the faintest flush of red, all so curiously marked and veined, and mottled. You may see it flitting about towards the end of May, and again quite late in the autumn, when it appears that a second brood issues from their prisons, the shape and colour of which has not been exactly ascertained, to sport awhile in the sunshine, spreading their wings to the extent of perhaps two inches across, although more frequently an inch and a half is the utmost reach of the downy membranes. This fly may be found in most parts of England, as well as Scotland; it is by no means a rare species, although not so common as many.

The Caterpillar feeds on the leaves of different species of

violet; it is black and hairy, with a double row of orange spots along the back.

The specific name *Euphrosyne*, carries us again to the ancient mythology, where we find it applied to one of three sisters, so beautiful that they were termed the Graces.

Fair and graceful they might be,
Stepping lightly as a fairy:
But they could not sport like thee
In the sunshine—Fritillary!

WEAVER'S FRITILLARY.

PLATE VI.—FIG. IV.

Papilio, or *Melitæa dea*. This it will be seen is a smaller fly than the species last described; it is also much rarer, only a few specimens having been taken in this country: the first of these to which the attention of scientific entomologists was called, was captured in Sutton Park, near Tamworth, in Staffordshire, by a Mr. Weaver, by whose name the insect was called. It is a remarkably elegant little fly, resembling closely in its tints and markings *Miss Euphrosyne*, to whom we have just dedicated a line or two.

The Caterpillar, which is dark-coloured and hairy, feeds upon the leaves of the sweet violet; the chrysalis has not been described, probably because not found by a British Naturalist. There are said to be two broods in the year.

The specific name seems to come from the Latin *di* or *dis*, meaning something which differs from another, as this fly does, although but slightly, from the better known preceding species.

HIGH BROWN FRITILLARY.

PLATE VII.—FIG. I.

Papilio, or *Argynnis adippe*. There are but five species of British Butterflies included in the genus *Argynnis*; these are all Fritillaries, and are the largest and most richly ornamented of that family group; the generic name comes, no doubt, from the Latin word *argent*—silver, as these flies are especially remarkable for the large spots and streaks of beautiful silvery white with which the under sides of the wings are decorated.

The High Brown is a fine species of Fritillary, measuring as much as two inches and a half across the expanded wings. It is found in considerable numbers in most of the southern counties of England, and has been taken as far north as Nottinghamshire. It appears about the end of June, or beginning of July; and commonly frequents heaths and the borders of woods.

The upper sides of the wings is a rich red brown, with a greenish tinge at the base, that is, where they are united to the body, which is also red brown. Lines, and dots, and crescent-shaped waves of black, arranged with the utmost regularity, give to the whole a tessellated or chequered appearance, as though it were a piece of inlaid work. We have in this country a wild plant—a kind of lily—the leaves of whose flesh-coloured blossoms are in like manner chequered with black spots; the old English name of this plant is Fritillary, and in the resemblance, real or fancied, of its blossoms to the wings of the Butterflies so called, originated their family title.

The Caterpillar of this species feeds upon the leaves of the sweet violet, and upon those of its near relative the pansy; no doubt also upon several other plants, although this has not been clearly ascertained. It is of a reddish colour at first, but turns to olive green after the first or second change of skin; it has an interrupted white line along the back, and a row of longish white spots on each side. It is hairy, but not very thickly covered.

The chrysalis is of a reddish colour, with silvery spots; the insect remains in this stage of its existence about a fortnight.

VENUS FRITILLARY.

PLATE VII.—FIG. II.

Papilio, or *Argynnis Aphrodite*. This is at once the rarest and most beautiful of all the Fritillaries with which we are acquainted, and the name of the ancient goddess of love and beauty has therefore been bestowed upon it. *Aphrodite* is but another title of that fabulous personage; it comes from a Greek word signifying froth, because she is said to have been born of the froth of the ocean—a frothy kind of story altogether, and the sooner it is blown away by the wind of truth the better.

Of this Venus among Butterflies, which is properly an American species, but a single specimen appears to have been taken in England, and that was captured in the summer of 1833, in Upton Wood, a few miles from Leamington, Warwickshire. The lucky captor was James Walhouse, Esq.; so says Mr. Morris, in whose large and magnificent volume on “British Butterflies” will be found depicted the under sides of the wings of this lovely visitant from the “far west;” here is his description of them, as far as words can describe such fair and delicate pieces of Almighty workmanship:—“Underneath, the ground colour is buff, tinged with pink, the tips greenish, the dark marks shewing through. The hind wings are bronze green, but dark at their base, and lighter towards the outside; a row of semicircular silver spots follows the margin, and there are numerous other silver spots.”

Of the Caterpillar and Chrysalis of this species, nothing seems to be known. The figure in the plate is the size of life; its elegance of shape, beauty of markings, and rich, harmonious tone of colour all must admire.

LARGE COPPER.

PLATE VIII.—FIG. II.

Papilio, or *Lycæna dispar*. There are five species of Copper Butterflies, so called from the brilliant coppery hue of the wings, known in Britain, but only two that can be called at all common; indeed perhaps only one, for the above-named species, since the draining and cultivation of the fenny districts of Cambridge and Huntingdonshire, Norfolk and Suffolk, its favourite places of resort, has in a great measure disappeared.

This fly, the largest of its genus, is remarkable for the flashing appearance of its burnished wings, which measure about an inch and a half across; it flits about among the reeds of the fens and marshes, and sports amidst the rank vegetation of the moist waste lands, like a gleam of red fire; when at rest it presents a very different aspect, pale orange and blue ashy grey being the colours of the under sides of the wings, these are diversified with spots of black, encircled with yellow rings and veins, and crescent-shaped marks of the same dark colour. In this fly, as in many other members of the Lepidopterous order, there is a marked difference between the male and female; the latter is considerably the largest, and instead of the wings being entirely of a bright copper-colour, except just a narrow black margin and a small irregularly-shaped spot on each, they are covered with dusky black at the bases, and have wide margins, and many large spots of the same, which greatly detract from the brilliant appearance of the insect.

The Caterpillar is short and thick, swelling up in the middle, and tapering off to a point at each end; the colour is bright green, with a dark line along each side, and little dots, like a white powder sprinkled all over it. The food to which it is most partial, is a kind of water dock. The chrysalis, according to Mr. J. F. Stephens, "is at first green, then pale ash-coloured with a black dorsal, (that is, back,) line, and two abbreviated (shortened) white ones on each side; in shape it bears a close resemblance to a shell twisted and pointed at one end and open at the other."

Curtis says of this splendid fly that "it was first discovered in Wales by the celebrated botanist Hudson; it has since been captured in considerable abundance in Wittlesea Mere, Huntingdonshire. July is undoubtedly the right season for this insect, although it is met with in the beginning of August, flying among reeds about the centre of the Mere near Yaxley; it is very active, and in windy weather conceals itself amongst the highest reeds. Upon these the Caterpillar probably feeds, as the Butterfly has been found upon them just emerged from the chrysalis drying its wings."

The origin of the generic name *Lycæna* is somewhat doubtful; *dispar*, in Latin, means unlike, unequal, and may probably refer to the *disparity* of the male and female of this species.

LARGE BLUE.

PLATE VIII.—FIG. III.

Papilio, or *Polyommatus Arion*. The little Blue Butterflies, of which there are as many as nine different species in Britain, must have been observed by most of my readers; they all belong to the genus *Polyommatus*, which word comes from the Greek, and signifies many-eyed; and they are so called on account of the numerous ring-encircled spots, resembling eyes, which their wings, especially the under sides, present.

This species is considerably the largest of these pretty flutterers, sometimes measuring as much as an inch and a half or three-quarters across the wings, which are of a delicate lilac-shaded blue, having a border of black, as if the fly had gone into mourning for a deceased friend or relative, and just a narrow edging of white, which beautifully relieves the otherwise sombre hue of the whole. The under sides of the wings are a brownish grey, becoming more blue towards the base. As many as fifty of the black spots of different shapes and sizes may sometimes be counted on two wings only.

This is not a common species in England, although it sometimes occurs in particular localities in considerable numbers. Kent,

Wilts, Somerset, Bedford, Hants, and Northampton, are the English counties in which it has been captured, as well as in North Wales. The specific name *Arion* is one which occurs in the mythology as that of a celebrated poet and musician, who so delighted the dolphins with his harmony, that when he threw himself into the sea, one of them became his horse and brought him safely to land—very like a whale!

I have now introduced you to one, at least, in several instances to many, of the most remarkable members of the different genera of the Diurnal Lepidoptera, in which British species are included; there is one genus, however, which has no representative in this parliament of Butterflies; this is the Skipper genus, called in scientific language *Hesperia*, probably from *Hesperus*, the evening star; they are all small brown, or orange-coloured flies, variously chequered and marked; there are seven British species, mostly found in and about woods. The genera *Pontia* and *Mancipium* are likewise unrepresented here; to the former belong the white flies, which are so common at certain seasons of the year. The wings of some of these are delicately veined with black, and sometimes with green, and they are all worthy of a close inspection. In the latter genus we find the pretty Orange Tip, the Large Black-Veined, or Hawthorn Butterfly, and several other elegant species, the names of which will be found in the following list, containing those of all the kinds known to be British. It is our purpose, in a future volume, to give a similar list of the Nocturnal and Crepuscular Lepidoptera, that is, the Moths of this country, with illustrations of the most beautiful and remarkable species. Foreign Butterflies and Moths will also form the subjects of two other volumes, so that four of them will contain a tolerably comprehensive account of the great Lepidopterous family, and induce, as we hope, many young readers to pursue the study of entomology in a regular and scientific manner. We wish these little books to be regarded as so many ornamented doorways, leading into the great temple of nature; and we would invite students to pass through and examine the wonders and beauty which lie beyond, praising God the while for the wisdom and goodness displayed in all His works, so various and so wonderful.

The study of insects has sometimes been objected to as trifling and frivolous, but no careful examination of aught which has

been created by the hand of the Almighty can be so; and the smaller the creatures examined, the more striking are the proofs which we meet with of the exercise of a power and a skill such as man never possessed.

Let us then say with Cowper—

“How sweet to muse upon His skill displayed,
(Infinite skill!) in all that He has made;
To trace in Nature’s most minute design
The signature and stamp of Power Divine;
Contrivance exquisite expressed with ease,
Where unassisted sight no beauty sees;
The shapely limb and lubricated joint,
Within the small dimensions of a point:
Muscle and nerve miraculously spun;
His mighty work who speaks, and it is done:
The invisible in things scarce seen revealed;
To whom an atom is an ample field.”

A COMPLETE LIST OF BRITISH BUTTERFLIES,

WITH THE MOST COMMON SCIENTIFIC NAME OF EACH, THE TIME OF ITS APPEARANCE, AND USUAL PLACES OF RESORT.

English Name.	Scientific Name.	Time of Appearance.	Places of Resort.
Swallow-tail, Scarce Swallow-tail, Brimstone, or Sulphur, Clouded Yellow,	<i>Papilio Machaon</i> , <i>Papilio Podalirius</i> , <i>Gonepteryx Rhamni</i> , <i>Colias Edusa</i> ,	May to August, May to August, February to September, August to October,	Fens and marshy places. Fens and marshy places. Gardens, lanes, and fields. Clover fields and grassy cliffs.
Pale Clouded Yellow,	<i>Colias Hyale</i> ,	May to October,	Clover fields and sunny banks.
Black Veined, Large White, Small White, Green Veined, Chequered, or Bath White, Wood White, Orange Tipped, Marbled White, Wood Argus, Wood Ringlet, Gate-keeper, or Speckled Wall,	<i>Pieris Cratægi</i> , <i>Pontia Brassicæ</i> , <i>Pontia Rapæ</i> , <i>Pontia Napi</i> , <i>Pontia Daphidice</i> , <i>Pontia Sinapis</i> , <i>Mancipium Cardamines</i> , <i>Hipparchia Galathea</i> , <i>Hipparchia Egeria</i> , <i>Hipparchia Hyperanthus</i> , <i>Hipparchia Megæra</i> ,	June to September, May to September, April to September, April to September, April to September, April to September, May to August, June to September, April to September, June to August, May to August,	Heaths and forest lands. Gardens, fields, and lanes. Gardens, fields, and lanes. Gardens, fields, and lanes. Woods and fields. Woods and heaths. Woods and gardens. Cliffs, woods, and moors. Woods and lanes. Woods and lanes. Lanes and park walls.
Rock-eyed Underwing, or Grayling, Small Meadow Brown, Large Meadow Brown, Heath, or Small Ringlet,	<i>Hipparchia Semele</i> , <i>Hipparchia Tithonus</i> , <i>Hipparchia Janira</i> , <i>Hipparchia Davus</i> ,	July to September, July to September, June to August, June to August,	Downs and heaths. Lanes and meadows. Lanes and meadows. Heaths and commons.

English Name.	Scientific Name.	Time of Appearance.	Places of Resort.
Least Meadow Brown, or Small Heath, Arran Argus, Scotch Argus,	<i>Hipparchia Pamphilus</i> , <i>Hipparchia Ligea</i> , <i>Hipparchia Blandina</i> ,	June to October, Not exactly known, Not exactly known,	Heaths and meadows. Isle of Arran. North of England, and South of Scotland. Mountainous districts. Wood sides. Woods and forests.
Small Ringlet, Silver-bordered Ringlet, White Admiral, Red Admiral,	<i>Hipparchia Cassiope</i> , <i>Hipparchia Hero</i> , <i>Limenitis Camilla</i> , <i>Vanessa Atalanta</i> ,	June to August, Not known—very rare, July to September, September and October; also in the spring;	
Peacock Butterfly,	<i>Vanessa Io</i> ,	July to September, and in the spring,	Gardens and fields.
Large Tortoise-shell,	<i>Vanessa Polychloros</i> ,	July to September, and in the spring,	Gardens and fields.
Small Tortoise-shell,	<i>Vanessa Urticæ</i> ,	July to October, and in the spring,	Woods and pastures.
Camberwell Beauty, Comma Butterfly,	<i>Vanessa Antiopa</i> , <i>Vanessa C-album</i> ,	August and September, June to October, and a few in the spring,	Gardens and hedge-rows. Gardens and fields.
Albin's Hampstead Eye, Painted Lady, Scarce Painted Lady, Purple Emperor, Purple Hairstreak, Green Hairstreak,	<i>Cynthia Hampstediensis</i> , <i>Cynthia Cardui</i> , <i>Cynthia Huntera</i> , <i>Apatura Iris</i> , <i>Thecla Quercus</i> , <i>Thecla Rubi</i> ,	Only one taken, June to October, But one taken. July to September, May to September,	Fields and commons. Hampstead. Gardens and fields. Woods and forests of oak. In and near woods. Waste places about bramble bushes.
White-W Hairstreak, Black Hairstreak, Brown Hairstreak, Duke of Burgundy Fri- tillary,	<i>Thecla W-album</i> , <i>Thecla Pruni</i> , <i>Thecla Betulæ</i> , <i>Nemeobius Lucina</i> ,	July to June to August and September, June to	Woods and wolds. Woods and hill sides. Woods and hill sides. Woods and wolds.

English Name.	Scientific Name.	Time of Appearance.	Places of Resort.
Greasy, or Marsh Fritillary,	Melitæa Artemis,	May to July,	Marshes and moist meadows.
Glanville Fritillary,	Melitæa Cinxia,	May to July,	Grassy slopes and glens.
Pearl-bordered Fritillary,	Melitæa Euphrosyne,	May to September,	Chiefly woods.
Pearl-bordered Likeness Fritillary,	Melitæa Athalia,	May to September,	Woods, marshes, and heaths.
Small Pearl-bordered Fritillary,	Melitæa Selene,	May to September,	Woods and heaths.
Weaver's Fritillary,	Melitæa Dia,	But two specimens taken.	Woods and heaths.
High Brown Fritillary,	Argynnis Adippe,	June to	Woods and heathy places.
Dark Green Fritillary,	Argynnis Aglaia,	July and August,	Woods and downs.
Queen of Spain Fritillary,	Argynnis Lathonia,	July and August—rare,	Woods and downs.
Venus Fritillary,	Argynnis Aphrodite,	But one taken.	
Silver-washed Fritillary,	Argynnis Paphia,	July to	Chiefly woods.
Large Copper,	Lycæna Dispar,	July to September,	Fenny districts.
Small Copper,	Lycæna Phlaæa,	April to September,	Moist meadows.
Scarce Copper,	Lycæna Virgaurea,	Very rare,	Marshy places.
Purple-edged Copper,	Lycæna Chryseis,	Very rare,	Forest lands.
Dark Underwing Copper,	Lycæna Hippothoe,	Very rare,	Meadows and marshes.
Mazarine Blue,	Polyommatus Acis,	Time not known—scarce,	Chalky districts.
Large Blue,	Polyommatus Arion,	July to	Fields and commons.
Holly, or Azure Blue,	Polyommatus Argiolus,	April to August,	About holly bushes.
Little, or Bedford Blue,	Polyommatus Althus,	May to July,	Chalkpits and wood sides.
Silver-studded Blue,	Polyommatus Argus,	July to	Woods and heaths.
Common Blue,	Polyommatus Alexis,	May to September,	Grassy meads and pastures.
Clifden, or Dartford Blue,	Polyommatus Adonis,		Chalky downs.
Chalk Hill Blue,	Polyommatus Corydon,	July to	Chalky downs.
Brown Argus Blue,	Polyommatus Agestis,	June to September,	Chalky downs near the coast.
Grizzled Skipper,	Hesperia Malvæ,	May to July,	Woods and meadows.

English Name.	Scientific Name.	Time of Appearance.	Places of Resort.
Dingy Skipper, Large Skipper, Pearl, or Silver-spotted Skipper, Small Skipper, Lulworth Skipper, Spotted Skipper,	Hesperia Tages, Hesperia Sylvanus, Hesperia Comma, Hesperia Linea, Hesperia Acteon, Hesperia Paniscus,	May to July, May to August, July and August, July and August, May to July,	Woods and meadows. Woody districts. Commons and parks. In and about woods. Chalky cliffs. Chiefly woods.

For most of the particulars in the foregoing table, the editor is indebted to "Morris's British Butterflies," a recently published volume, in which every species is beautifully figured, and well described by a thoroughly practical entomologist.

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